Huronia District Fisheries Management Plan

1989 - 2000

Ontario

Ministry of Natural Resources

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Minister

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Preface

This document represents the last of a six part planning program designed to develop a fisheries management plan for the Huronia Administrative District. The Plan presents descriptive information and data on the extent and nature of the fisheries resource. It also contains a series of statements which define management goals, objectives and production/utilization targets for sportfish, commercial food fish, baitfish, rare and endangered species.

A major element of the plan is a listing of management strategies and tactics to be implemented to facilitate achievement of objectives and targets. Finally, an implementation schedule describes where and how selected strategies and tactics are to be implemented over the next five years.

In developing the plan, the ministry has endeavored to be responsive to the wishes of the various fisheries user groups expressed during the public consultation component of the planning program. Opportunities to present input to the process were provided during July and November of 1987. Details of the public consultation program are contained in the two unpublished reports; Public Consultation Summary and Analysis of Public Input - Phase One (OMNR, 1987d) and Phase Two (OMNR, 1988). These document all public input as well as presenting an analysis of public concerns.

The first published planning document distributed to the public was the Background Information Summary Report, (OMNR, 1987a). It presented descriptive information, a listing of issues and problems affecting the district's fisheries and a large number of strategies and tactics each of which was proposed as a means of dealing with one or more of the issues/problems. This report served as a starting point for dialogue with the public. Major elements of the Draft Fisheries Management Plan (OMNR, 1987c) reflected views expressed by the public following their review of the Background Information Summary Report. Similarly, public and senior staff review of the draft plan has resulted in further adjustments to strategies and tactics during preparation of this, the final plan.

While publication of this document marks the end of a planning program, the process of management planning must be ongoing if it is to effectively meet the needs of the resource and the resource users. Therefore, provision is made in the plan to review and when necessary revise this document at five year intervals.

Regional Director

District Manager

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1.0 INTRODUCTION

1.1 Purpose

The purpose of the Fisheries Management Plan for Huronia District is to provide both short and long term direction for the fisheries management program to the year 2000.

1.2 Planning Process

This plan is being developed within the context of the Ontario Ministry of Natural Resources' (OMNR) integrated resources management planning system (OMNR, 1986a). Resource management planning is carried out to solicit public input, to ensure programs and activities are integrated so that targets and objectives can be achieved and to provide managers with direction on how to manage a particular resource.

The Southern Ontario Coordinated Program Strategy (OMNR, 1982), provided general policies, guidelines, objectives and targets for resource management in the administrative districts within southern Ontario. The Huronia District Land Use Guidelines (OMNR, 1983) defined resource management program guidelines, objectives and strategies to be used to achieve targets.

The District Fisheries Management Plans Planning Manual (OMNR, 1986d) provided guidance in the preparation of the planning document. The policy framework, management principles, goals and objectives for fisheries management in the province of Ontario originate from the task force on Strategic Planning for Ontario Fisheries (Anon., 1975, 1976). Emanating from this, the Lake Huron Strategic Fisheries Management Plan (OMNR, 1987g) was prepared to provide a comprehensive, lake-wide management strategy for individual districts to supplement the direction provided by the District Land Use Guidelines (OMNR, 1983). The Lake Simcoe Environmental Management Strategy (Anon., 1985) and Lake Simcoe Background Report, Draft (OMNR, 1987e) also provided guidance and information.

The original fisheries targets and management direction identified in the District Land Use Guidelines were formulated with the best available information. Some of these data were questionable and resulted in unrealistic estimates. For example, the sport fishery targets developed from the 1980 angler survey (Bedi and Clifford, 1980) were generally too high. During the fisheries management planning exercise, new data were used to formulate more realistic and up-to-date targets. With approval of the District Fisheries Management Plans, the District Land Use Guidelines has been amended to reflect changes in fisheries targets and management direction.

Within the district, management plan development has involved collection and analysis of technical data, portions of which are highlighted in the plan. The following documents have been prepared during the process.

1. Terms of Reference (OMNR, 1986c)
2. Detailed Background Information Report (OMNR, 1987f)
3. Background Information Summary Report (OMNR, 1987a)
4. Public Consultation-Summary and Analysis of Public Input - Phase One (OMNR, 1987d)
5. Huronia District, Draft Fisheries Management Plan (OMNR, 1987c)
6. Public Consultation - Summary and Analysis of Public Input - Phase Two (OMNR, 1988)

1.3 Existing Policy and Technical Direction

This plan adheres to current OMNR policies and is founded on an integrated resource management approach. This approach encourages multiple use but coordinates various programs to ensure that conflicts are minimized and management strategies that benefit several programs are encouraged. An integrated approach to fisheries management is critical given that other issues and activities have a direct impact on local fisheries.

An integrated approach is also important on waterbodies which are located in more than one district. For example, Lake Simcoe which is located in Huronia and Maple Districts is managed as a single unit under the direction of the Lake Simcoe Fisheries Management Committee with management responsibilities shared between the districts.

Management strategies are based upon accepted resource management principles presented in Strategic Planning for Ontario Fisheries documents three and four (Anon., 1976, 1976) and current technology.

2.0 DISTRICT FISHERIES PERSPECTIVE

2.1 District Setting

The Huronia District, situated in South Central Ontario, contains 48 municipalities and includes Simcoe and Dufferin Counties (except East Luther Township) and the southern portion of the District Municipality of Muskoka. In 1986 the district's population was approximately 265,000.

Located within the Central Administrative Region of the OMNR, the district is bordered by seven other districts representing Central (3), Algonquin (3) and Southwestern Regions (1) (Figure 1). The district encompasses 853,000 ha of which 225,000 ha (26 percent) is water (OMNR, 1983). The majority of district land is under private ownership (92 percent); however, the ministry administers 51,000 ha within Crown land. Two Indian reserves occupy 6400 ha of the district. Located in Rama Township and on Christian Island in Georgian Bay, they are occupied by the Rama and Beausoleil Bands respectively.

The most significant climactic factor affecting the district's fisheries relates to precipitation which is received throughout the year.

FIGURE 1

HURONIA DISTRICT

REGIONAL SETTING

10 0 10 30 50mi
10 0 10 20 30 40 km

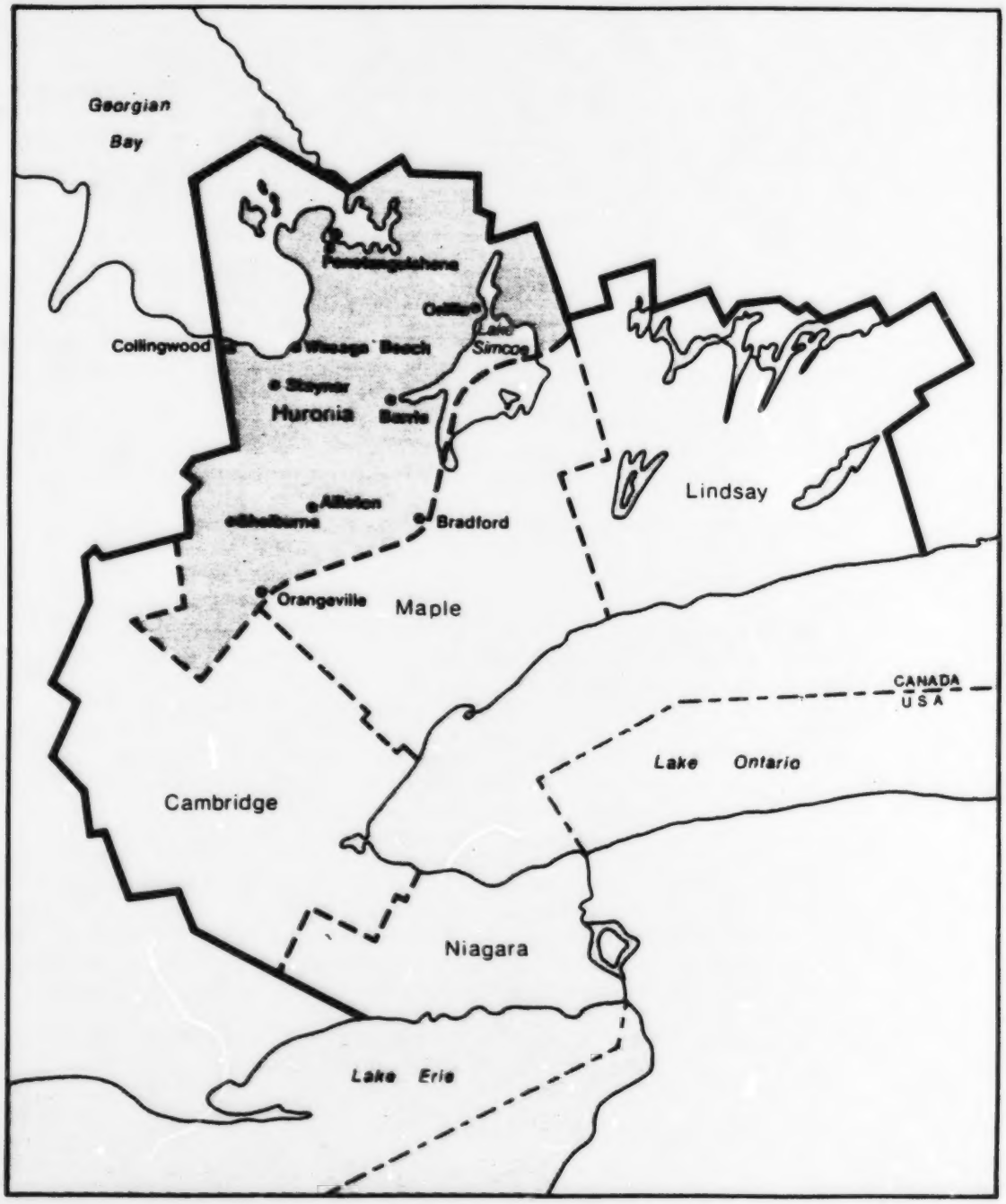
N

LEGEND

MINISTRY of NATURAL RESOURCES REGIONAL BOUNDARY

MINISTRY of NATURAL RESOURCES DISTRICT BOUNDARY

HURONIA DISTRICT



Seventy-two percent of the average annual accumulation falls as rain and rivers, streams and lakes are recharged continually.

There are two types of bedrock in the district. Precambrian granites and gneisses, most of which are either exposed or thinly covered, are found in the northeast. The remaining area is underlain by paleozoic limestones and shales. Generally, these are obscured by varying thicknesses of glacially deposited materials. On the Precambrian Shield runoff is rapid and a lack of alkaline soils makes the waterbodies susceptible to the detrimental effects of acid rain. In addition, a lack of natural aquifiers of significant size contributes to dramatic fluctuations in surface water levels.

In the remainder of the district, four upland type physiographic regions serve as watershed divides and their abundant, permeable soils provide excellent headwater source areas for most of the coldwater (trout) streams. The Simcoe Lowlands complete the physiographic makeup of the district. Here, poorly drained soils combined with intensive agricultural activity, have lead to enrichment of receiving water bodies. This process is most significant in the Lake Simcoe watershed which receives enriched run off from large agricultural areas including the intensively farmed Holland Marsh.

2.2 The Fishery Resource

Of the water area in the district, 92.6 percent is contributed by the Huronia portions of Georgian Bay (160,800 ha) and Lake Simcoe (36,250 ha) (see Map 1, Appendix 1 and 2). Inland (warmwater) lakes contribute 3933 ha or two percent in 47 lakes each greater than 10 ha in size. The Trent-Severn Waterway consists of seven lakes and the Severn River, and contributes five percent or 10572 ha. while four warmwater rivers and streams contribute 0.1 percent. Finally, 1600 km of coldwater rivers and streams contribute 922 ha or 0.4 percent to the total.

In Lake Simcoe, the seventh largest inland lake in Ontario, the major sport fish are lake trout, lake whitefish, lake herring, walleye, northern pike, muskellunge, large and smallmouth bass and yellow perch. Over the years naturally reproducing lake trout, lake whitefish and lake herring populations have decreased while those of yellow perch and smallmouth bass have increased. Lake trout, and to some extent lake whitefish numbers have been increased by stocking hatchery reared fish in recent years. In Georgian Bay the sport fishery includes lake trout backcross, rainbow trout and a few lake whitefish to the west of the Tiny Peninsula and walleye, northern pike, black crappie and smallmouth bass to the east. The bay also supports the only commercial food fishery in the district with lake whitefish and deepwater cisco (chub) the principle species harvested.

TABLE 1

Summary of Fisheries Resource Inventory Data - Huronia District (1986)

WATER	NO.	TOTAL AREA (ha)	TOTAL YIELD (kg/ha/yr)	ESTIMATED POTENTIAL (kg/yr)
Inland Lakes	47	3933	7.3	30227
Trent-Severn Waterway	8	10572	9.0	95258
Coldwater Rivers & Streams	55	922	7.5	6915
Warmwater Rivers & Streams	4	264	30.0	7920
Total inland waters		15691	8.8	140320
Georgian Bay		160800	2.3	362965
Lake Simcoe*		36250	4.4	160950
District Baitfish				172016
GRAND TOTAL		212741	3.1	836253

* Values for Lake Simcoe taken from Lake Simcoe Background Report, Draft, (OMNR, 1987e), and divided by 2 to approximate contribution to Huronia District.

Table 2. Comparison (Target Testing) of Current Use, Projected Use to the Year 2000, and Potential Yield for the Fisheries in Huronia District

	Current Use		Projected Use to the Year 2,000		DLUG Target (1983)		Potential Yield		Target	
Sport Fishery	kg.	Angler Days	kg.	Angler Days	kg.	Angler Days	kg.	Angler Days	kg.	Angler Days
Lake Simcoe	62,457	92,612	89,564	132,805	-	-	160,950	238,656	89,564	132,805
Rest of District	97,143	373,488	103,536	403,095	-	-	387,567	1,384,644	103,536	403,095
Total	159,600	466,180	193,100	535,900	324,000	2,340,000	548,517	1,623,300	193,100	535,900
Food Fish	kg.		kg.		kg.		kg.		kg.	
Lake Simcoe	0		0		0		0		0	
Rest of District	54,240		98,896		47,000		115,718		115,718	
Total	54,240		98,896		47,000		115,718		115,718	
Commercial Baitfish	kg.	Doz.	kg.	Doz.	kg.	Doz.	kg.	Doz.	kg.	Doz.
Lake Simcoe	19,935	1,315,710	28,587	1,886,742	16,614	1,096,524	19,935	1,315,710	19,935	1,315,710
Rest of District	48,886	782,174	56,219	899,504	15,625	250,000	152,081	2,433,296	56,219	899,504
Total	68,821	2,097,884	84,806	2,786,246	32,239	1,346,524	172,016	3,749,006	76,154	2,215,214

A majority of the inland lakes are situated on the Precambrian Shield and are generally less accessible than those to the south. Sport fish populations include largemouth bass, yellow perch, smallmouth bass, walleye and northern pike.

After Lake Simcoe, the Trent-Severn Waterway lakes represent the largest component of the district's fishery. Sport species present include those present in the inland lakes plus muskellunge.

Warmwater rivers and streams are highly productive and contain a diverse and often seasonally varying fish community. In some cases (e.g. lower Nottawasaga River) coldwater species migrate through en route to and from upstream spawning beds while warm water species are resident or are present for longer periods.

The coldwater river/stream fishery is concentrated in tributaries of streams entering Georgian Bay and Lake Simcoe. It includes migratory species, rainbow trout and Pacific salmon (Georgian Bay only) and resident brown and brook trout.

2.3 Potential Yield

Potential yield is the estimated amount of fish which can be removed annually without having a negative impact on population levels.

The potential yield of fish from all district waters is 856,253 kg. This includes 140,320 kg of sportfish from inland waters (warmwater lakes, rivers and streams and coldwater rivers and streams), 362,965 kg of sport and commercial food fish from Georgian Bay and 160,950 kg of sportfish from Lake Simcoe. It also includes 172,016 kg of baitfish from all waters. Georgian Bay and Lake Simcoe contain 80% of sport and commercial food fish potential and 60% of baitfish potential.

2.4 Current and Projected Use

Use of the district's fishery resource is measured in kilograms and angler-days for sport fisheries, in kilograms for the commercial food fishery and in kilograms and dozens for the commercial baitfish industry. The current use of fish from district waters is significantly less than the estimated potential yield (Table 2).

It is estimated that anglers expend 466,150 angler-days in harvesting about 159,600 kg of fish. They spend almost three times more effort fishing for trout than for the next most popular species assemblages in the district, bass and pike. There are, however, shortages of specific desired species in certain locations.

The harvest by the commercial food fish industry occurs entirely in Georgian Bay and fluctuates annually; but, in 1985 was 54,240 kg. landed by five commercial fishermen. The main species caught is lake whitefish.

The bait fish harvest is currently 68,821 kg. annually. About 30% of this comes from Lake Simcoe and consists of emerald shiners.

Current use of the fishery is expected to increase 15 percent by the year 2000 over most of the district but by 43.4 percent (Anon., 1985) in communities near Lake Simcoe. This is based upon the projected increase in the provincial and Lake Simcoe area populations. For planning and management purposes, targets have been developed to reflect the supply of fish and are discussed in sections 3.2 to 3.5.

2.5 Issues and Problems

There are a number of issues and problems associated with management of the fisheries resources of Huronia District. These must be dealt with and overcome to permit achievement of management objectives and production utilization targets. Issues and problems have been summarized under six categories.

(i) Loss of Fish Habitat and Environmental Quality

Fish habitat destruction and/or deterioration has resulted in lost fish stocks and fishing opportunities. The most significant contributing factors to this problem are land development, including urban and shoreline development/alteration and agricultural land use and cropping practices.

There are presently 10 major dams on district rivers and streams contributing to the alteration of fish habitat, restriction of fish movement and segregation of certain fish species to specific sections of watercourses.

The Severn River, a major component of the Trent-Severn Waterway, is a very productive water body, the flow of which is regulated by three hydro electric power dams and a marine navigation lock. Water level management is intended to maximize hydro production potentials, facilitate navigation during the open water season and restrict flooding. Water level regulation in the Severn River also affects levels on Lake Couchiching, Sparrow Lake and Lake Simcoe. OMNR concerns regarding protection of critical fish habitats are relayed to Trent-Severn Waterway, Ontario Hydro and Orillia Water Light and Power Commission officials; however, no formal agreements exist determining minimum water flows required for fisheries maintenance (i.e. walleye egg incubation).

Ontario Hydro is currently studying the feasibility, costs and benefits of altering the water level control cycle in order to realize an increase in electric power generation. The potential impacts on fisheries habitat are being studied.

Ontario Ministry of the Environment (OMOE) issues permits for the removal of more than 50,000 litres/day of water from natural waterbodies. No permit is required to take less water per day. Water removal, especially for irrigation, occurs throughout the southern agricultural areas of the district. Although the permit system offers some degree of control, OMNR has no formal opportunity to influence this activity and it may be impacting salmonid populations in streams.

Nutrient loading from agricultural and urban runoff and sewage treatment plants have accelerated the eutrophication of Lake Simcoe and Severn Sound. Intensive agricultural practices have damaged numerous natural watercourses. Shoreline developments, including dredging, filling and dock construction, have created problems on Lake Simcoe, Georgian Bay and many inland lakes.

Contaminants produced through industrial activities have had few impacts on local fisheries.

Siltation has damaged many coldwater streams. This has resulted from gravel pit drainage, road construction, residential and industrial development, stream channelization and poor agricultural practices.

(ii) Loss of Fish Stocks

Loss of fish stocks may arise from a number of causes including loss/destruction of habitat, overexploitation, eutrophication (loss of water quality) illegal harvest, predation and introduction of exotic species.

Overharvest by sports fishermen has been the primary cause of a decline of largemouth bass in some small inland lakes. Habitat deterioration combined with over harvest lead to the complete loss of lake trout from Six Mile Lake, Woodland Lake and Gloucester Pool. In Georgian Bay, the sea lamprey and excessive harvest by commercial fishermen lead to the collapse of lake trout populations.

A decline in Georgian Bay, Severn Sound walleye populations has occurred in recent years and may, in part, be attributed to changes in the water quality of the Sound and negative interactions with black crappie.

Introduction of exotic species has been a factor in decline of Georgian Bay lake trout (sea lamprey) and may contribute to a decline of muskellunge (carp). Lake Simcoe whitefish and lake trout may also be negatively affected by rainbow smelt.

Habitat loss/deterioration resulting from construction of dams, combined with heavy exploitation and agricultural water uses are placing stress on resident trout species in coldwater streams; e.g. brown trout in the Boyne River and brook trout in the Sheldon Creek.

Illegal harvest, especially during spawning season can, affect rainbow trout and walleye populations and may be thwarting efforts to rehabilitate Georgian Bay with lake trout backcross.

(iii) Under-utilization of Stocks

Within the district some stocks of traditionally popular species such as rainbow trout and largemouth bass as well as coarse fish such as carp, suckers, catfish and panfish are being underutilized.

Rainbow trout populations in Georgian Bay and its feeder streams are considered to be sufficient to support an increase in angler effort. While trout are effectively inaccessible during the summer months due to their dispersal to deeper,unknown portions of the Bay, increased angling opportunities could be provided in the lower portions of major feeder streams through an extension to seasons. Similarly, the largemouth bass population in Georgian Bay may be capable of supporting a greater level of fishing pressure and season extension may also be appropriate.

The limited amount of access to streams and lake shoreline bounded by private property is a major factor contributing to the under-utilization of sport species throughout the district. Various methods are available for increasing the supply of public access, ranging from seeking the cooperation of landowners to acquiring land for facility development.

The alteration and removal of existing sanctuaries would permit increased utilization of some sport species stocks. A sanctuary in Tug Channel at Port Severn was instituted to provide protection for spawning walleye, but has prevented utilization of trout using the area. Through study, a means of altering the regulation may be identified which would permit utilization of the trout. A sanctuary in Crooked Bay of Six Mile Lake is serving no biological purpose and, therefore, should be removed.

Chemical contamination in local sport species can lead to forced underutilization. Lake St. John walleye are an example of a species with elevated mercury levels.

Coarse fish are present in suitable numbers for exploitation in most streams and lakes. They are underutilized largely as a result of a lack of angler interest and knowledge of the various species characteristics in terms of providing a good fishing experience and a palatable food product.

It is possible that regulating selected water bodies to permit bow hunting for carp would provide a unique type of recreational experience.

(iv) Resource Use Conflicts

Within Huronia District the most noteworthy user conflict occurs between commercial and sport fishermen. However, competition also occurs between various segments of the sports angling public. Ice fishermen and summer anglers may perceive each other as their competition, e.g. Sparrow Lake; local anglers see non-residents as competitors for fish, e.g. yellow perch fishing on Lake Simcoe. Conflicts may occur between anglers that prefer one species over another e.g. brown trout vs. rainbow trout. Groups differing on the basis of fishing methods such as fly fishermen vs. hardware fishermen may perceive a conflict.

(v) Lack of Public Awareness

Fisheries management is a complex undertaking and the public can benefit from greater knowledge and awareness of the many factors involved. Unrealistic demands are often placed upon the resource, and the commonly held beliefs are that stocking fish or increasing enforcement activity will result in more fish in the creel. The role of habitat is less than fully understood and there is a lack of appreciation for the impact other water users have upon the fishery. There is a need to provide the public (anglers, developers, planners, municipal decision makers) with more fisheries information; public response indicates support for implementing or expanding public education programs.

(vi) Insufficient Scientific Knowledge

Present efforts by managers are often hampered by lack of information upon which to base management decisions. A need exists to update and expand population and critical habitat inventories to assist in setting management priorities. Existing fish production and potential yield predictions need considerable refinement. There is presently no adequate method for assessing baitfish potential or harvest and current use data require updating.

Fish populations are continually changing, desirable species generally decline while less desirable species increase. Causes of lake trout and walleye declines are often unknown or poorly understood. The impacts and mitigation of habitat altering activities are poorly understood and must be investigated if fish habitats are to be protected and present production maintained.

3.0 MANAGEMENT DIRECTION

The purpose of this section is to identify the management direction as outlined in the objectives and targets provided through the Strategic Plan For Ontario Fisheries, the Southern Ontario Coordinated Program Strategy and the Huronia District Land Use Guidelines; and to present the strategies and tactics necessary to address the issues and problems and so achieve the objectives and targets.

The targets presented in the following sections are specific to the Huronia District. To develop district targets for Lake Simcoe, which is managed jointly by Huronia and Maple Districts, the target testing process was done on a lake basis and the current use, projected use, potential yield and target numbers for the whole lake were divided in half to get the district values.

There is some doubt as to accuracy of the Huronia targets developed with this method. The Lake Simcoe Fisheries Management Committee will work closely with the Lake Simcoe Assessment Unit and the districts to refine the targets over the next five years. The strategies and tactics in this plan for Lake Simcoe are consistent with those presented in the Maple Fisheries Management Plan.

3.1 General Fisheries Management Goal and Objectives

The goal for the OMNR is to provide opportunities for outdoor recreation and resource development for the continuous social and economic benefit of the people of Ontario and to administer, protect and conserve public lands and waters.

The objectives for fisheries management in southern Ontario are to provide opportunities for recreational fishing and to realize economic benefits derived from sport, commercial and bait fisheries consistent with the maintenance of healthy fish communities.

The Strategic Plan for Ontario Fisheries document number four presents goal statements related to the above statements. They emphasize the importance of protection and rehabilitation of fish habitat and fish communities, and of creating greater public awareness of the importance of healthy fish communities and fish habitat.

The Huronia District Land Use Guidelines identified one general and four specific objectives for fisheries management. Specific objectives dealt with sport, commercial, baitfish fisheries and rare and endangered species. The guidelines also presented specific, numeric production/protection targets related to each of these objectives.

The original District Land Use Guideline targets have been refined to reflect the results of analysis of more recently collected data related to resource productivity and the anticipated increase in demand for fisheries resources. Significant changes in targets are explained below, in the appropriate sections.

In developing the management strategies and tactics to be implemented, the following general fisheries management principles are being adhered to:

. In all producing water bodies, protection needs will receive the highest priority, followed by rehabilitation of fish communities and aquatic habitat.

. In coldwater rivers and streams the highest priority will be placed on protection, assessment, rehabilitation and inventory of habitat. This signifies that coldwater habitat and species are the most fragile and that growing angler demand for these species may, in some locations, exceed production capacity.

. The concepts of integrated resource management and multiple use will be applied to ensure that, whenever possible, other OMNR resource management activities/programs are designed/implemented in a manner which compliments fisheries management programs.

. Georgian Bay and Lake Simcoe are very significant waters in Southern Ontario and the ever increasing levels of use occurring on these waters means that a large portion of the district fisheries management effort will be directed towards them.

. On Georgian Bay the OMNR will rely on anglers and commercial fishermen to participate in cooperative management and adhere to catch limits, quotas and regulations to protect fish stocks.

. The effectiveness of all existing and new management programs will be assessed on an ongoing basis and, depending upon assessment findings, programs may be maintained, altered, or discontinued.

. Fisheries management staff will continually strive toward development of a greater scientific knowledge of fish populations, habitat requirements and conditions, and the nature/functioning of the various aquatic ecosystems.

. Development of a greater public understanding of fisheries, their values, factors which cause stress and management techniques will be an ongoing effort. The Community Fisheries Involvement Program, "C.F.I.P.", can play an important role in this process.

The specific objectives and targets which have been developed for the district's recreational, commercial and baitfish fisheries are consistent with the general objectives but reflect demands on the resource by users and the capability of the fisheries to meet those demands.

Key components of this planning document are the list of management strategies and tactics. Together they state how production targets will be achieved. Strategies can be directly related to issues and problems which, in turn, represent obstacles to the achievement of targets. Each strategy addresses a problem and contributes to the achievement of a target. Each target is the subject of a number of strategies.

Tactics can be equated with specific management activities or types of activities and can apply to a specific water body or class of water bodies, e.g. population assessments (inland lakes).

3.2 Sport Fisheries Management

Objective

To meet the projected demand within the limits of a wisely managed and rehabilitated resource.

Targets

The sport fishing target is to provide 535,900 angler-days annually by the year 2000. This target is significantly lower than the original District Land Use Guideline target of 2,340,000 angler-days (opportunities) which was based upon the 1980 Provincial Angler Survey. As a result of more recent surveys conducted in the district, the target has been set, based on the potential yield of 548,519 kg and reflects a projected 15 percent increase in the province's population generally and a 43.4% increase in the Lake Simcoe area.

In terms of harvest, the target is to provide 193,100 kg annually by the year 2000. The estimated fishing quality standards for the district have been calculated to be 0.5 kg. and 0.2 kg. per angler-day for warmwater and coldwater species respectively (does not apply to Lake Simcoe which is 0.67 kg).

Discussion

The sport fishery is very diverse and existing populations are the result of both natural distribution and extensive stocking programs. The trout species assemblage found in Georgian Bay and most of its tributaries, and in Lake Simcoe and some of its feeder streams, is clearly the most significant component of the fishery especially in terms of the fishing effort which it attracts.

While essential for trout, the coldwater rivers and streams supply a small portion of the total production of the trout assemblage relative to Georgian Bay and Lake Simcoe. However, resident brook trout and brown trout are highly prized species and attract a significant volume of effort, relative to the available habitat.

Continuation of current management efforts, especially rehabilitation of Lake Simcoe lake trout and lake whitefish populations and establishment of a self-sustaining lake trout backcross population in Georgian Bay, will result in achievement of the coldwater fishery targets. Naturalized populations of Pacific salmon may also help achieve the coldwater fish target. Target achievement will be enhanced by additional programs especially extensions to seasons for rainbow trout.

The warmwater sport fishery consists of bass, pike (includes muskellunge) walleye and perch. Largemouth bass and yellow perch are common throughout the district and are the only sport species in many of the Precambrian Shield lakes. The target is well within the district's potential yield for warmwater species and additional opportunities could be created by shifting angler interest to underutilized species, extending bass seasons on Georgian Bay and improving the depressed Georgian Bay/Severn Sound walleye populations.

Severn Sound walleye require continued study to determine the cause of the population decline. A wide range of habitat and population rehabilitation measures must also be evaluated and when appropriate, implemented to overcome problems. Interim measures may include strict limits on commercial utilization and on angler catches, and stocking of fingerlings by volunteer groups.

3.3 Commercial Food Fish Management

Objective

To maintain a viable industry by encouraging the harvest of commercial fish stocks, under the quota management system, where it is biologically and economically feasible.

Target

The commercial food fishing target is to harvest 115,718 kg of fish from the Huronia waters of Georgian Bay by the year 2000. This target does not include coarse fish (carp) or warmwater fish species for which a market currently does not exist.

Discussion

Commercial food fishing activity is confined to the waters of Georgian Bay and is based upon the following species, listed in order of significance: lake whitefish, chub, yellow perch and walleye. In the intervening period since the District Land Use Guidelines were published, the method of regulating the industry has changed. Since 1984, a maximum annual quota system has been in place with two quota areas; GB09 and GB11 within the Huronia portion of the Bay. Seven licences were purchased by the Province in 1983-84. The result is that harvest is currently shared amongst five licences.

The target could be increased considerably if chub populations recover and harvests approach the potential of 48,200 kg rather than the current quota of 17,318 kg. Chub are beginning to show signs of recovery in 1988. Over a ten year period, it has been seen that harvest levels fluctuate greatly. These are at least partially explained by variations in year class strengths of certain fish stocks. The current quotas have been used as a guide in determining the target production. However, it is realized that fluctuations will continue to occur and that targets will require review and possible revision annually.

The most significant deviations from the current harvest are a reduced potential for lake whitefish by 14,483 kg (60483 to 46000). The short term production of lake whitefish is currently higher than the long term average potential yield because of recent, strong year classes that have increased lake whitefish numbers greatly.

The current downturn in the Severn Sound walleye population is an example of a commercially harvested species requiring a quota re-alignment to bring harvest into line with current production. Catch of walleye in Nottawasaga Bay is presently less than the quota because some fishermen are not fishing actively for walleye.

Successful establishment of a reproducing lake trout backcross population in the Bay will enhance the commercial fish harvest. Cooperation of the fishermen will be required in establishing this population (i.e. limits on harvest until populations are established). A spring carp fishery was re-activated in 1986, because a harvest ban, due to high contaminant levels, was lifted.

Anglers and commercial fishermen must resolve their differences, agree to management efforts to partition the fisheries resource and embark in cooperative management of the fishery.

3.4 Baitfish Management

Objective

To manage local baitfish stocks to maintain a viable commercial industry consistent with stable baitfish populations.

Target

The commercial baitfish target is to harvest 2,215,214 dozen baitfish by the year 2000. This level of utilization is considered to be well within the potential yield but will require increasing the harvest in Georgian Bay and inland waters while maintaining Lake Simcoe harvest at current levels. This may be difficult because of the inaccessibility of many areas of Georgian Bay and the market preference for Lake Simcoe emerald shiners.

Discussion

The annual harvest of baitfish has fluctuated widely from year to year. Emerald shiners and various "creek" minnow species are the principle groups harvested.

A new block system for licencing and managing district baitfish harvest has been in operation since 1986. Based upon township boundaries the system identifies 28 units, each with one licence. In addition there are three other inland units and three units for Georgian Bay. The Lake Simcoe fishery is managed by Maple District.

Demand for baitfish, mainly emerald shiners, from Lake Simcoe exceeds the potential yield. Future harvest must be brought into line with the lake's productivity. Failure to do this will likely result in insufficient supplies of forage for the upper level predators which are sought after sport species.

Research is required to develop a better understanding of the factors affecting baitfish productivity and the interrelationships between baitfish and other species, especially predators.

3.5 Provincially Rare and Endangered Fish Species Management

Objective

To prevent the extinction of any native fish species

Target

To ensure no native fish species becomes extinct

Discussion

Within the district, one fish species native to Georgian Bay, is considered by the Committee on the Status of Endangered Wildlife in Canada to be provincially threatened; short nose cisco - Coregonus reighardi (Parker, 1986) and a local stock of one other species is considered to be threatened in Lake Simcoe; lake whitefish - C. clupeaformis (Evans et al., 1987).

The short nose cisco in Georgian Bay was never a commercially significant species as it was in Lake Ontario. Research is required to determine the size of the population and the critical habitat. Currently, it is being given protection through an established sanctuary (Map 2).

Lake Simcoe whitefish and lake trout were identified as declining stocks in the late 1960's and stocking programs are ongoing. A sanctuary lake in Nipigon District has been stocked with lake trout and lake whitefish from Lake Simcoe to ensure that Lake Simcoe genetic material is not lost.

3.6 Management Areas

For management and planning purposes, the district's water bodies have been divided into six management areas on the basis of fish community types present and the over-riding management direction to be followed.

Inland Lakes

The 47 warmwater lakes are listed in Appendix 2. While there are no inland coldwater lakes in the district, two Precambrian Shield lakes - Woodland and McCrae are considered to have the potential to support a splake population on a put, grow and take basis.

Many of the lakes on the Precambrian Shield have little or no shoreline development. On the remaining lakes, development has occurred and, in some cases, has been very intensive. Aquatic habitat has been subjected to substantial impact as a result of shoreline alteration and rehabilitation will be implemented, whenever possible.

Recent inventory data on many of the inland lakes is not available. A comprehensive re-surveying program will be implemented. Many of the shield lakes, while not easily accessible, are heavily used and an effective means of regulating effort may be required. Inventory results will permit the setting of management priorities.

Trent-Severn Waterway

The waters of the Trent-Severn Waterway in Huronia include Lake Couchiching, Sparrow Lake, Six Mile Lake, Black Lake, Gloucester Pool, Tea Lake, Little Lake and the Severn River. As part of this artificially regulated system, these water bodies are subject to seasonal and annual water level fluctuations. Priorities favor navigation and power production. Key fisheries habitat, especially walleye spawning beds downstream of dams/power stations are occasionally exposed due to artificially reduced flows. Management efforts will be directed at reducing these impacts upon fish habitat while continuing to meet the other objectives for the waterway.

The waterway supports a very productive and heavily used warmwater fishery; 68% of inland water potential exists in these waters. In addition to improved water level management, rehabilitation of the Gloucester Pool walleye population through stocking, by volunteer groups, will be the focal point of management activity and will be supported by regular creel surveys and walleye population assessments.

Coldwater Rivers/Streams

The 55 streams in this category are listed in Appendix 1. All are either producing or are capable of producing coldwater fish species, especially trout. In some cases e.g. Nottawasaga River, these streams are actually a portion of a large river system.

Many streams support both resident and migratory stocks which tend to compete with each other for habitat. Populations of both types of species can benefit from partitioning streams and natural and artificial structures may serve as barriers to protect resident stocks where appropriate.

Resident and migratory salmonids have specific water quality requirements. Habitat protection and rehabilitation will therefore be a primary management focus.

Stocking, especially brown trout, into under-utilized coldwater stream habitat will be used to increase production and fishing opportunities.

Increases in fishing opportunities may also result from efforts to encourage/provide access to streams.

In many instances, an extensive stream assessment and critical habitat identification program should be undertaken to update data in advance of stream specific management plan development.

Warmwater Rivers/Streams

The remainder of the streams/rivers in the district, not capable of supporting salmonids, are included in this designation. These water bodies are especially important in producing bait fish (if less than 10 m in width) and/or warmwater sport species, especially walleye and bass. Four warmwater rivers have upper sections which contain coldwater habitat accessible to migratory salmonids. Management will focus on protection and improvement of habitat as well as on improving user data through creel surveys. Improving access to these waters will permit better utilization of a highly productive resource.

Georgian Bay

The Bay will be managed to provide sport, commercial food and commercial bait fisheries based on self-sustaining populations of coldwater and warmwater species. The Bay has the potential to produce 50 percent of the harvest of the entire district. However, problem areas exist and will receive special attention. Severn Sound and Collingwood Harbour are each the target of a major, joint federal/provincial Remedial Action Plans coordinated by OMOE. The OMNR's share of the effort will involve habitat mapping studies, population rehabilitation (stocking), population assessment and creel surveys. Some of these activities will be part of the management program throughout the Bay.

The lake trout backcross stocking program will continue in an effort to establish this species as a self-sustaining replacement for the now extinct lake trout.

Severn Sound walleye populations will continue to receive intensive study to determine which factors or combination of factors have lead to their apparent decline.

Potential yield from the Bay will be apportioned among the different user groups. Whitefish, chub and yellow perch will be managed for the commercial fishery by assigning annual quotas for the various fish stocks.

Sport fishing for salmonids including lake trout backcross, walleye, smallmouth bass and black crappie will be encouraged. Efforts will be made to improve access to the Bay.

Lake Simcoe

This management area includes only that portion of the lake (approximately 50 percent) within Huronia District, although lakewide water quality improvements are being directed by the Lake Simcoe Environmental Strategy (Anon., 1985). There is a need to refine production and use values to better represent the contributions of each district. This should be coordinated by the Lake Simcoe Management Committee.

Major ongoing programs involve habitat mapping studies, data collection through netting and creel studies, and rehabilitation of degraded populations of lake trout and whitefish through annual lake trout and whitefish stocking efforts. Generally these programs will be conducted by the Lake Simcoe Assessment Unit with assistance from Huronia staff when required.

The need for more sensitive management of bait fish populations has been established and commercial harvests may be regulated to ensure adequate supplies of forage species while allowing the industry to survive.

3.7 Management Strategies and Tactics

Management strategies are to be considered as policies that will be adopted to meet the objectives set out in section 3 of this plan.. Management tactics are specific actions that will be taken to implement the strategies.

The management strategies and tactics to be implemented over the planning period differ widely on the basis of the scope of their application. Almost half of the strategies and especially their associated tactics are related to "field" management programs or activities to be implemented on specific water bodies or types of water bodies; e.g. inland lakes. Other strategies, however, call for the application of "administrative" measures on a district wide basis, (e.g. enforcement of existing regulations, plan review, and public education/involvement).

Variations in scope also apply regarding the number of fishery types to be affected by a particular strategy or tactic, e.g. sport fishery only or sport and commercial fisheries.

3.7.1 General Strategies and Tactics

The following strategies and their related targets will address issues and problems affecting all types of fisheries, wherever they occur across the district. A number of the strategies and tactics infer the carrying out of activities in the field on a where or when required basis. Others represent program initiatives intended to benefit the resource and to be directed at resource users on a district-wide basis.

(i) PROTECT EXISTING HABITAT

A variety of tools can be used to protect fish habitat and achieve fisheries objectives. One of the principle means of habitat protection will be through the plan input and review process. All planning and development proposals will be reviewed. The Ministry will require measures which prevent or reduce the impacts of any development on aquatic habitats. It will be important to ensure the fisheries concerns are identified at the start of the planning process and that comments are consistent through the process. Specific tactics employed in this review and other measures to ensure the protection of existing habitats are as follows:

- implement the Federal Department of Fisheries and Oceans policy (DFO, 1986) for the management of fish habitat including the principles of no net loss and net gain of habitat, i.e. strive to balance unavoidable habitat loss with habitat replacement and amelioration on a project-by-project basis

- encourage municipalities to prepare official plan amendments and zoning bylaws that afford protection to fisheries resources

- enforce existing legislation pertaining to protection of habitat

- implement a wetland policy to protect shoreline and headwater wetlands

- continue education of the public as well as OMNR program staff regarding the importance of habitat protection

- liaise with conservation authorities and other provincial, federal and international agencies (e.g. Ontario Ministry of the Environment, Ontario Ministry of Agriculture and Food, Ontario Hydro, Department of the Environment, Department of Fisheries and Oceans, International Joint Commission) to ensure that sensitive/critical habitat is identified and receives recognition and protection

- map critical habitats (d.g. spawning and nursery areas), especially on Lake Simcoe, Georgian Bay and in coldwater streams
- minimize stream bank and shoreline disturbance resulting from development activities by applying the guidelines presented in "Guidelines on use of "vegetative buffer zones" to protect fish habitat in an urban environment." (OMNR, 1987h)

- require erosion and sediment controls during and after construction, including site rehabilitation as soon as possible after construction, to reduce siltation of receiving waters

- prohibit direct inflow of untreated stormwater into watercourses and ensure proper treatment of stormwater

- discourage dredging and channelization; where channelization is unavoidable, natural channel features are to be incorporated and passage for fish migration provided where appropriate

- ensure that channels created for access to shoreline properties are perpendicular to the shoreline and generally no wider than three to four metres

- investigate the feasibility of providing incentives to landowners to protect fisheries habitat

- promote the creation of fish habitat in large scale shoreline projects such as breakwalls and marinas through use of gentle slopes of rock riprap

- ensure flow through passages are incorporated into large scale, offshore developments such as docks, groynes and breakwalls to allow fish passage and appropriate water circulation

- require work in the water be undertaken during a time of the year when impact on fisheries habitat will be minimal

- discourage destruction of aquatic plants; where their destruction is unavoidable, mechanical harvesting shall be encouraged over chemical treatment. OMNR will work closely with the Ontario Ministry of the Environment to develop guidelines and review requests for permits to remove aquatic plants

- discourage the filling of shallow, productive, near shore waters, especially in lakes

(ii) IDENTIFY DEGRADED HABITAT

- monitor regularly the physical and biological components of fisheries habitat by means of lake and stream habitat assessments

- liaise with the Ontario Ministry of the Environment on fish kills caused by degraded water quality, contaminant spills, etc.

(iii) IMPROVE THE EFFECTIVENESS OF ENFORCEMENT PERSONNEL/RESOURCES AS A FISHERIES MANAGEMENT TOOL

- develop and implement an enforcement plan for the district

(iv) PREVENT OVER-EXPLOITATION

- enforce existing legislation especially with regards to daily catch and possession limits for the sport fishery, quotas for the commercial fishery and licence conditions for the baitfish fishery

(v) IMPROVE INFORMATION/EDUCATION PROGRAMS DESIGNED TO INCREASE PUBLIC APPRECIATION FOR THE COMPLEXITIES OF FISHERIES MANAGEMENT

- liaise regularly with contractors, developers, municipal staff and councillors, etc. regarding the legalities and implications of work in or near the water
- encourage in-house development of a portable display for use at construction trade shows
- produce and distribute educational/interpretive literature
- prepare and present audio/visual programs
- assist OMNR parks visitor services staff in developing and presenting fisheries interpretive programs to park visitors

(vi) ENCOURAGE PUBLIC PARTICIPATION IN DISTRICT FISHERIES MANAGEMENT AND PROMOTE UNDERSTANDING AMONGST USER GROUPS

- meet with fishery users as required to address management problems, user conflicts and to assist with information transfer
- encourage Community Fisheries Involvement Program projects designed to involve groups and improve fisheries resources and improve public understanding of management issues
- encourage Deputy Conservation Officers to assist with fisheries enforcement during peak periods
- promote a fisheries conservation/management ethic amongst families, especially young people
- encourage the public to provide information regarding illegal activities effecting fisheries

(vii) CREATE NEW HABITAT

- encourage proponents of water related development projects to include creation of new fish habitat in their designs
- encourage Community Fisheries Involvement Program projects designed to create new spawning and/or nursery areas
- encourage the search for new knowledge regarding the creation of fish habitat

(viii) ENCOURAGE EXPERIMENTAL MANAGEMENT AND FISHERIES RESEARCH

- identify needs for consideration by OMNR Fisheries Branch and Fisheries Research
- contract outside/private researchers such as universities, graduate students and consultants

(ix) IMPROVE WATER QUALITY WITH RESPECT TO CONTROLLING CONTAMINANTS, EUTROPHICATION AND ACID PRECIPITATION

- continue working relationship/liaison with the International Joint Commission, Ontario Ministry of the Environment, Ontario Ministry of Agriculture and Food and the Federal Department of Fisheries and Oceans
- continue monitoring contaminants, acidification through existing programs

(x) MONITOR ALL DISTRICT FISHERIES ON A REGULAR BASIS TO DETERMINE THE STATUS OF SPECIES OR STOCKS

- assess migratory salmonids, especially rainbow trout, at five year intervals at Earl Rowe and Nicolson's Dam Fishways (1992, 1997 etc.)
- monitor salmon populations in Georgian Bay by regular fishway counts, index netting in Nottawasaga Bay and through stream biomass surveys
- work with the Lake Huron Fisheries Unit (LHFU) and the Lake Simcoe Fisheries Assessment Unit (LSFAU) on projects involving monitoring district fisheries (e.g. index netting for lake whitefish, lake trout and lake trout backcross, creel surveys)
- regularly assess fish populations in all lakes, streams and rivers

(xi) PREVENT EXTINCTION OF RESIDENT SPECIES OR STOCKS

- enforce existing seasons, limits and quotas, especially for species under stress
- maintain genetic integrity of existing populations through careful selection of fish for stocking

(xii) PREVENT INTRODUCTION OF DISEASES

- enforce existing legislation regarding the movement of fish, including the aquaculture industry
- promote public education regarding the benefits of disease free fish

(xiii) PREVENT THE INTRODUCTION OF UNDESIRABLE SPECIES

- enforce existing legislation including that pertaining to the aquaculture industry to prevent the culturing and release of undesirable species or strains and encourage the use of wild strains

(xiv) PROMOTE THE AQUACULTURE INDUSTRY TO ASSIST WITH FISHERIES MANAGEMENT

- encourage baitfish culture to relieve pressure on natural baitfish populations
- encourage private fish farmers to provide fishing opportunities by constructing fish out ponds where the public pays a fee
- encourage the province to reduce the licence fees for private fishing preserves to assist private enterprise in providing fishing opportunities

3.7.2 Sport Fishery Strategies and Tactics

(i) PREVENT OVEREXPLOITATION

- control access to the Crown land fishery by restricting or eliminating boat caching on lakes with limited/restricted access
- investigate the feasibility of regulating the permissible landing net sizes used on streams with migratory salmonid populations
- encourage fly fishing only on portions of the Nottawasaga River and some of its tributaries as well as on the North River

- restrict the harvest of lake trout backcross in Georgian Bay to keep annual mortality to a maximum of 50 percent

(ii) PROTECT EXISTING HABITAT

- continue to liaise with the Trent Severn Waterway, Orillia Water, Light and Power Commission and Ontario Hydro regarding water level control programs as they relate to critical fisheries habitat on Lake Simcoe and the Trent Severn Waterway

- work with the Ontario Ministry of the Environment in implementing, the "Development Guidelines for Lake Simcoe" and other components of the Lake Simcoe Environmental Management Strategy (Anon., 1985)

- review proposals to construct dams on coldwater streams to prevent their construction where inappropriate or to ensure that bottom draw designs are used

(iii) REHABILITATE DEGRADED OR ALTERED FISH COMMUNITIES

- stock appropriate species to rehabilitate communities in Lake Simcoe, Georgian Bay including Nottawasaga Bay and Severn Sound, Gloucester Pool, North River, Hog Creek and Mad River

- support the Federal Sea Lamprey Control Program to control populations of lamprey in Georgian Bay, the Sturgeon River and other streams as necessary

- encourage anglers to release breeding stock, especially large walleye in Georgian Bay and Gloucester Pool and muskellunge throughout the district

- continue to assist groups participating in Community Fisheries Involvement Program projects to stock walleye fingerlings and, possibly, fry where required to assist walleye populations especially in Severn Sound and Gloucester Pool

(iv) REHABILITATE DEGRADED HABITAT

- develop detailed habitat management/rehabilitation plans for watersheds and lakes

- liaise with OMOE regarding the development and implementation of Remedial Action Plans for Collingwood Harbour and for Severn Sound

- expand the Community Fisheries Involvement Program and other corporate or private rehabilitation efforts especially with regards to coldwater streams

- work with landowners, municipalities, conservation authorities and private groups to improve and maintain fisheries habitat by providing manpower, funding and technical expertise for projects especially on coldwater streams and inland lakes with heavily developed shorelines

- remove dams from coldwater streams or promote the conversion of top draw dams to bottom draw where appropriate

(v) IDENTIFY UNDERUTILIZED SPECIES, STOCKS AND HABITAT

- conduct lake and stream inventory studies and creel surveys to identify under-utilized stocks, species and habitat and to determine angler preferences

(vi) EXPAND ASSESSMENT OF FISH POPULATIONS IN REHABILITATION AREAS

- assess walleye populations especially in Severn Sound, Gloucester Pool and the North River

- assess lake trout backcross populations in Nottawasaga Bay

- assess lake trout, lake whitefish populations in Lake Simcoe

- assess salmonid populations in coldwater streams and rivers especially using biomass surveys

- assess populations where Community Fisheries Involvement Program projects have been implemented

(vii) UPDATE AND REFINE USER SURVEYS

- perform creel surveys at a district level

- coordinate creel surveys on Severn Sound as described in the assessment plan for Lake Huron (OMNR, 1986b)

- assist the Lake Simcoe Fisheries Assessment Unit with creel surveys on Lake Simcoe

- encourage implementation of a Provincial angler survey

(viii) UTILIZE SPORT SPECIES TO MAXIMUM BENEFIT

- extend the season for rainbow trout in coldwater streams/rivers including the lower portion of each of the Nottawasaga, Sturgeon and Coldwater Rivers

- investigate the feasibility of opening the rainbow trout season at 6:00 a.m. each year to reduce enforcement problems and increase the number of legitimate fishing opportunities

- investigate the feasibility of opening the rainbow trout season on a constant date, e.g. April 20, to reduce enforcement problems and increase the number of legitimate fishing opportunities

- investigate the feasibility of extending the season closing date for bass in waters of Georgian Bay from November 30 to March 31

- investigate the feasibility of altering the sanctuary at Tug Channel (Port Severn) to allow spring fishing for salmonids and remove the sanctuary in Crooked Bay of Six Mile Lake

(ix) MAXIMIZE UTILIZATION OF ALL FISH HABITAT

- maintain fishways and remove barriers for migratory trout and salmon in coldwater streams where appropriate and where they do not threaten resident populations of trout (e.g. brook trout) or increase access for sea lamprey

- create barriers to prevent migratory salmonids from ascending unsuitable ditches and small intermittent streams for spawning; e.g. Black Ash Creek

- stock desirable species in underutilized habitat e.g. chinook salmon in Georgian Bay; largemouth bass in Orangeville Reservoir, Big Gully, Douglas, Narrow and Stuart Lakes; splake in Woodland and McCrae Lakes; and brown trout in the Mad and Wye Rivers, and Lafontaine and Marl Creeks

(x) ENCOURAGE ACCESS

- encourage fisheries resource oriented organizations to develop access facilities for streams e.g. Trout Unlimited

- work with municipalities to develop access

- investigate the feasibility of providing incentives to landowners to provide access to anglers

- acquire private lands and develop access facilities

(xi) CREATE NEW HABITAT

- investigate the feasibility of creating artificial reefs (log cribs) and spawning habitat (half logs) for largemouth and smallmouth bass in developed inland lakes such as Orr Lake

(xii) PREVENT THE EXTINCTION OF RESIDENT SPECIES OR STOCKS IDENTIFIED AS THREATENED

- maintain gene pools of Lake Simcoe whitefish and lake trout in refuge lakes e.g. Upper Roslyn Lake, Nipigon District for lake trout and lake whitefish

(xiii) PREVENT THE INTRODUCTION OF UNDESIRABLE SPECIES

- maintain/create barriers to partition coldwater streams to keep rainbow trout and salmon from using brook trout habitat where appropriate

(xiv) PROMOTE UNDERSTANDING AMONGST USER GROUPS

- assist in the negotiation of Indian fishing agreements

(xv) ENCOURAGE USE OF UNDERUTILIZED SPECIES/STOCKS

- encourage fishing derbies which target underutilized species, e.g. black crappies in Georgian Bay

- encourage private stocking of warmwater fishing ponds with natural populations of bullhead, pumpkinseed and rock bass where appropriate

- expand the bowhunting season for carp and suckers to include the near-shore waters of the Huronia portion of Georgian Bay and all of Matchedash Bay

3.7.3 Commercial Fishery Strategies and Tactics

(i) REHABILITATE DEGRADED OR ALTERED FISH COMMUNITIES

- stock lake trout backcross to rehabilitate the deep water trout community in Georgian Bay

- monitor chub populations and control harvest to rebuild the population

(ii) PREVENT OVER-EXPLOITATION

- encourage the use of live capture gear

- enforce existing legislation especially those regulating catch quotas, seasons and reporting requirements

- continue quota management for the commercial food fishery on Georgian Bay

- restrict the harvest of lake trout backcross to keep total annual mortality to a maximum of 50 percent

- manage the harvesting of baitfish to assure:

(a) adequate forage for top predator species and
(b) adequate supplies for the baitfish industry especially in the Lake Simcoe fishery

- prevent local extinctions of baitfish species by controlling harvest and preventing habitat loss; exclude baitfish harvest from areas inhabited by rare species

(iii) MONITOR AND ALLOCATE RESOURCES

- assess the needs of all users and allocate resources, based on potential yields, to meet demands

(iv) PREVENT INTRODUCTION OF UNDESIRABLE SPECIES

- enforce existing legislation and regulations including those pertaining to the aquaculture industry to prevent culture and release of undesirable species or strains and encourage the use of wild strains

(v) PROMOTE UNDERSTANDING AMONGST USER GROUPS

- assist in the negotiation of Indian fishing agreements

(vi) ENCOURAGE THE USE OF UNDERUTILIZED FISH SPECIES/STOCKS

- encourage the development of markets for underutilized commercial species

(vii) ENCOURAGE THE COMMERCIAL AQUACULTURE INDUSTRY TO UTILIZE APPROPRIATE GROUND AND SURFACE WATERS FOR THE CULTURING OF SALMONIDS, OTHER SPORT SPECIES AND BAITFISH, WHEN APPROVED UNDER PROVINCIAL REGULATION

3.7.4 Rare and Endangered Fish Species Management Strategies and Tactics

(i) REHABILITATE DEGRADED OR ALTERED FISH COMMUNITIES

- stock lake trout and lake whitefish in Lake Simcoe

(ii) EXPAND ASSESSMENT OF FISH POPULATIONS IN LAKE SIMCOE

- work with the Lake Simcoe Fisheries Assessment Unit on projects designed to assess lake trout and lake whitefish populations in Lake Simcoe

(iii) MONITOR ALL DISTRICT FISHERIES ON A REGULAR BASIS TO IDENTIFY THREATENED SPECIES OR STOCKS

- encourage Lake Huron Fisheries Unit to assess the status of the short nose cisco in Georgian Bay

(iv) PREVENT THE EXTINCTION OF RESIDENT SPECIES OR STOCKS

- maintain a sanctuary for short nose cisco in Georgian Bay
- establish other sanctuaries as necessary
- ensure that commercial fishermen comply with any sanctuaries, new or existing on Georgian Bay
- maintain gene pools of Lake Simcoe whitefish and lake trout in refuge lakes
- support the efforts of other organizations such as Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Royal Ontario Museum that are investigating the status of rare and endangered fish species
- inform the public on the status and importance of rare and endangered species in local waters

4.0 Implementation

4.1 General Background

Consistent with the planning period established for all strategic land use planning exercises, this fisheries plan provides the direction for fisheries management activities within the Huronia District to the year 2000. Within that period all activities should be consistent with the strategies and tactics which have been selected to achieve the stated targets and objectives.

Generally, strategies outlined in this fisheries management plan will be implemented through:

(i) the preparation of five year implementation schedules;

(ii) programs and projects approved and funded under the Ministry of Natural Resources work planning process;

(iii) input to, or participation in other programs carried out by the Ministry of Natural Resources or local conservation authorities

(iv) cooperative efforts with local sportsmen's organizations and private interest groups under the Community Fisheries Involvement Program (C.F.I.P.)

(v) review and approval of work plans and proposals from municipalities, private landowners and other government agencies

4.2 Implementation Schedule, 1989-1993

The first five year fisheries management implementation schedule is detailed in Table 3 and on Map 2. All fisheries projects are subject to the requirements of the Environmental Assessment Act and complying with class assessment requirements may result in changes to specific factors identified in this plan.

Generally, fisheries management over the next five year period will focus on habitat protection, assessment and rehabilitation.

Habitat protection will be a priority in the next five years. Plan input and review will be one of the main tools utilized and a large amount of staff time will be directed towards this end.

Habitat and population assessment activities are expected to utilize a significant majority of the annual budgets. Conducting inventories on all inland lakes over the five years will provide much needed updated Habitat assessments will be carried out in support of the Collingwood Harbour and Severn Sound Remedial Action Plans as well as on a number of populat coldwater streams.

While some creel surveys will be conducted with existing funding, on heavily used waters, especially Georgian Bay, Lake Simcoe and the Trent-Severn Waterway; additional funding will be required to survey coldwater streams for which very little angler use data presently exists. Administrative activities designed to permit better utilization of sport species including rainbow trout will be undertaken with existing funding. Additional funding will be required, however, to regulate (eliminate) the cacheing of boats on heavily used Precambrian Shield lakes.

Stocking programs will continue to concentrate upon rehabilitation of Lake Simcoe whitefish and lake trout and upon establishment of a lake trout backcross fishery in Nottawasaga Bay. To better utilize existing habitat, brown trout will be stocked in selected streams and largemouth bass will be placed in under producing inland lakes on the Precambrian Shield. To provide fishing opportunities splake will be stocked in McCrae and Woodland Lakes. All stocking programs are to be implemented with existing funding.

Habitat rehabilitation will continue with existing funding and coldwater stream habitat rehabilitation will be a priority. OMNR efforts will focus on the upper Nottawasaga River system while C.F.I.P. projects will be oriented to smaller stream systems throughout the district. Some rehabilitation work will be coordinated with the Nottawasaga Valley Conservation Authority. Additional funding will be required to expand and enhance existing programs and monitor previously completed projects.

Projects which relate to specific management tactics that are not identified in the first (1988-1992) implementation schedule will be identified and priorized in subsequent schedules.

TABLE 3 FISHERIES MANAGEMENT PLAN IMPLEMENTATION SCHEDULE, 1989-1993
HURONIA DISTRICT

General Strategies and Tactics

(i) PROTECT EXISTING HABITAT	EXISTING FUNDING	ADDITIONAL FUNDING
. implement the Federal Department of Fisheries and Oceans policy for the management of fish habitat (DFO, 1986) including the principles of no net loss and net gain of habitat, i.e. strive to balance unavoidable habitat loss with habitat replacement and amelioration on a project-by-project basis	Throughout the district	
. encourage municipalities to prepare official plan amendments and zoning bylaws that afford protection to fisheries resources	Through plan input review program	
. enforce existing legislation pertaining to protection of habitat	Throughout the district	
. implement a wetland policy to protect shoreline and headwater wetlands	Throughout the district primarily via the plan review program	
. continue education of the public as well as OMNR program staff regarding the importance of habitat protection	As required	Increase public education by various means

	EXISTING FUNDING	ADDITIONAL FUNDING
• liaise with conservation authorities and other provincial, federal and international agencies (e.g. Ontario Ministry of the Environment, Ontario Ministry of Agriculture and Food, Ontario Hydro, Department of the Environment, Department of Fisheries and Oceans, International Joint Commission) to ensure that sensitive/ critical habitat is identified and receives recognition and protection	All programs throughout the district Severn River, Six Mile Lake Gloucester Pool	Assess impact of water removal for irrigation from trout streams in South Simcoe County
• map critical habitats (e.g. spawning and nursery areas), especially on Lake Simcoe, Georgian Bay and in coldwater streams	Georgian Bay, Collingwood area Lake Simcoe in cooperation with Lake Simcoe Fisheries Assessment Unit	Coldwater streams
• minimize stream bank and shoreline disturbance resulting from development activities by applying the guidelines presented in "Guidelines on use of "vegetative buffer zones" to protect fish habitat in an urban environment." (OMNR, 1987h)	Throughout the district through plan input and review program	
• require erosion and sediment controls during and after construction, including site rehabilitation as soon as possible after construction, to reduce siltation of receiving waters	Throughout the district through plan review and enforcement programs	
• prohibit direct inflow of untreated stormwater into watercourses and ensure proper treatment of stormwater	Throughout district especially in urban areas. Plan review and enforcement programs	Increase compliance monitoring
• discourage dredging and channelization; where channelization is unavoidable, natural channel features are to be incorporated and passage for fish migration provided where appropriate	Lake Simcoe, Georgian Bay, small developed lakes through enforcement and cooperation with all district programs	Increase compliance monitoring

	EXISTING FUNDING	ADDITIONAL FUNDING
. ensure that channels created for access to shoreline properties are perpendicular to the shoreline and generally no wider than three to four meters	As above	As above
. investigate the feasibility of providing incentives to landowners to protect fisheries habitat	Initiate discussions within OMNR	Throughout the district
. promote the creation of fish habitat in large scale shoreline projects such as breakwalls and marinas through use of gentle slopes of rock riprap	Include in review of development proposals	
. ensure flow through passages are incorporated into large scale, offshore developments such docks, groynes and breakwalls to allow fish passage and appropriate water circulation	Throughout the district - through plan review program and as above	Increase compliance monitoring
. require work in the water be undertaken during a time of the year when impact on fisheries habitat will be minimal	Throughout the district - through plan review program and enforcement program and as above	Increase compliance monitoring
. discourage destruction of aquatic plants; where their destruction is unavoidable, mechanical harvesting shall be encouraged over chemical treatment. OMNR will work closely with the Ontario Ministry of the Environment to develop guidelines and review requests for permits to remove aquatic plants	Throughout the district	Increase compliance monitoring
. discourage the filling of shallow, productive, near shore waters, especially in lakes	Throughout the district	

	EXISTING FUNDING	ADDITIONAL FUNDING
(ii) IDENTIFY DEGRADED HABITAT		
. monitor regularly the physical and biological components of fisheries habitat by means of lake and stream habitat assessments	Lake Simcoe, Collingwood Harbour, Severn Sound, Lake Couchiching, Mad River, Batteaux River, Noisy River, North River, Nottawasaga River (above Hwy #50), Pine River, Hog Creek, Willow Creek, Lovers Creek, Orr Lake, Bass Lake, Farlain Lake, Little Lake (Vespra Twp.)	Priority rate additional waters
. liaise with the Ontario Ministry of the Environment on fish kills caused by degraded water quality, contaminant spills, etc.	As required	
(iii) IMPROVE THE EFFECTIVENESS OF ENFORCEMENT PERSONNEL/ RESOURCES AS A FISHERIES MANAGEMENT TOOL		
. develop and implement an enforcement plan for the district	Development of the plan	Total implementation may require additional funding
(iv) PREVENT OVEREXPLOITATION		
. enforce existing legislation especially with regards to daily catch and possession limits for the sport fishery, quotas for the commercial fishery and licence conditions for the baitfish fishery	Regular monitoring of high use sport fisheries, and commercial fisheries	Increase enforcement throughout district (re. enforcement plan) for all fisheries
(v) IMPROVE INFORMATION/EDUCATION PROGRAMS DESIGNED TO INCREASE PUBLIC APPRECIATION FOR THE COMPLEXITIES OF FISHERIES MANAGEMENT		
. liaise regularly with contractors, developers, municipal staff and councillors, etc. regarding the legalities and implications of work in or near the water	Throughout the district as opportunities arise and through plan input and review program	Organize workshop/ seminars and produce educational materials

	EXISTING FUNDING	ADDITIONAL FUNDING
. encourage in-house development of a portable display for use at construction trade shows		In addition to above
. produce and distribute educational/ interpretive literature	Maintain current materials - update/reprint as necessary	Create print/distribute new materials
. prepare and present audio/visual programs	As requested	Develop district over-view a-v program and distribute widely
. assist OMNR parks visitor services staff in developing and presenting fisheries interpretive programs to park visitors	As requested	In all district Provincial parks
(vi) ENCOURAGE PUBLIC PARTICIPATION IN DISTRICT FISHERIES MANAGEMENT AND PROMOTE UNDERSTANDING AMONGST USER GROUPS		
. address management problems, user conflicts and to assist public with information transfer	Meet with fisheries users as required and especially during reviews of fisheries management plan	
. encourage Community Fisheries Involvement Program projects designed to involve groups and improve fisheries resources and improve public understanding of management issues	Maintain the promotion of the program. Encourage habitat improvement projects	Acquire additional staff to promote, coordinate and work more closely with participants
. encourage Deputy Conservation Officers to assist with fisheries enforcement during peak periods	Maintain current level of Deputy Conservation Officer involvement	
. promote a fisheries conservation/management ethic amongst families, especially young people	Maintain existing trout stocking at Pine River Provincial area and maintain interpretive display at Earl Rowe Provincial Park	Stock catchable size fish in Copeland Forest Resources Management Area Earl Rowe Provincial Park and other sites

	EXISTING FUNDING	ADDITIONAL FUNDING
• encourage the public to provide information regarding illegal activities effecting fisheries	Maintain toll free telephone number and duty officer system	
(vii) CREATE NEW HABITAT		
• encourage proponents of water related development projects to include creation of new fish habitat in their designs	Throughout the district through the plan input and review program and liaison with all OMNR programs	Develop guidelines
• encourage Community Fisheries Involvement Program projects designed to create new spawning and/or nursery areas	Promote with potential participants/user groups	
• continue the search for new knowledge regarding the creation of fish habitat	Encourage research	Develop site specific research proposals
(viii) ENCOURAGE EXPERIMENTAL MANAGEMENT AND FISHERIES RESEARCH		
• identify needs for consideration by OMNR Fisheries Branch and Fisheries Research	Can occur through ongoing communication with Fisheries Research - see above	
• contract outside/private researchers such as universities, graduate students and consultants		Develop priorities and seek cooperators
(ix) IMPROVE WATER QUALITY WITH RESPECT TO CONTROLLING CONTAMINANTS, EUTROPHICATION AND ACID PRECIPITATION		
• continue working relationship/liaison with the International Joint Commission, Ontario Ministry of the Environment, Ontario Ministry of Agriculture and Food and the Federal Department of Fisheries and Oceans	Ongoing, administrative cooperate when and where required	

	EXISTING FUNDING	ADDITIONAL FUNDING
. continue monitoring contaminants, acidification through existing programs	Implement Lake Huron contaminant monitoring schedule. Develop priorities with region and OMOE as required and implement	Expand monitoring programs throughout the district
(x) MONITOR ALL DISTRICT FISHERIES ON A REGULAR BASIS TO DETERMINE THE STATUS OF SPECIES OR STOCKS		
. assess migratory salmonids, especially rainbow trout, at five year intervals at Earl Rowe and Nicolson's Dam Fishways (1992, 1997 etc.)	Maintain the interval	
. monitor salmon populations in Georgian Bay by regular fishway counts, index netting in Nottawasaga Bay and through stream biomass surveys	Biomass surveys on Black Bank Creek, Coldwater River, Boyne River, Hog Creek, Matheson Creek, Pine River, Scott's Creek, Sheldon Creek, Sturgeon River, Willow Creek, Silver Creek	
. work with the Lake Huron Fisheries Unit (LHFU) and the Lake Simcoe Fisheries Assessment Unit (LSFAU) on projects involving monitoring district fisheries (e.g. index netting for lake whitefish, lake trout and lake trout backcross, creel surveys)	Develop priorities with LHFU and LSFAU	
. regularly assess fish populations in all lakes, streams and rivers	All inland lakes by 1992	Selected coldwater streams
(xi) PREVENT EXTINCTION OF RESIDENT SPECIES OR STOCKS		
. enforce existing seasons, limits and quotas, especially for species under stress	Enforcement program, lake whitefish and lake trout in Lake Simcoe, walleye in Severn Sound	Increase enforcement effort on Georgian Bay and Lake Simcoe (may be addressed in Enforcement Plan)

	EXISTING FUNDING	ADDITIONAL FUNDING
• maintain genetic integrity of existing populations through careful selection of fish for stocking	(See Sport Fishery Strategy III)	
(xii) PREVENT INTRODUCTION OF DISEASES		
• enforce existing legislation regarding the movement of fish, including the aquaculture industry	Enforcement program - district wide	Inform aquaculturists of regulations pertaining to their operations. Issue fact sheets/news releases on regulations re. movement of fish
(xiii) PREVENT THE INTRODUCTION OF UNDESIRABLE SPECIES		
• enforce existing legislation including that pertaining to the aquaculture industry to prevent the culturing and release of undesirable species or strains and encourage the use of wild strains	District wide - through enforcement program	(See Strategy XII above)
(xiv) PROMOTE THE AQUACULTURE INDUSTRY TO ASSIST WITH FISHERIES MANAGEMENT		
• encourage baitfish culture to relieve pressure on natural baitfish populations	Direct efforts at reducing demand for baitfish taken from Lake Simcoe	
• encourage private fish farmers to provide fishing opportunities by constructing fish out ponds where the public pays a fee	Provide necessary assistance upon request	Direct effort to areas away from natural producing water bodies
• encourage the province to reduce the licence fees for private fishing preserves to assist private enterprise in providing fishing opportunities	Initiate discussion within OMNR	

	EXISTING FUNDING	ADDITIONAL FUNDING
(i) PREVENT OVEREXPLOITATION		
• control access to the Crown land fishery by restricting or eliminating boat caching on lakes with limited/restricted access		Develop, implement and enforce regulations for Long, Boleau and Eastern Lakes
• investigate the feasibility of regulating the permissible landing net sizes used on streams with migratory salmonid populations	Initiate internal review re. administrative/enforcement concerns	Public involvement/ consultation
• encourage fly fishing only on portions of the Nottawasaga River and some of its tributaries as well as on the North River	Initiate internal review re. administrative/enforcement concerns	Public involvement/ consultation
• restrict the harvest of lake trout backcross in Georgian Bay to keep annual mortality to a maximum of 50 percent	Enforcement program	Increase enforcement effort on Georgian Bay
(ii) PROTECT EXISTING HABITAT		
• continue to liaise with the Trent-Severn Waterway, Orillia Water, Light and Power Commission and Ontario Hydro regarding water level control programs as they relate to critical fisheries habitat on Lake Simcoe and the Trent-Severn Waterway	Ongoing - administrative	Negotiate agreements for minimum flows especially during walleye spawning season
• work with the Ontario Ministry of the Environment in implementing, the "Development Guidelines for Lake Simcoe" and other components of the Lake Simcoe Environmental Management Strategy (Anon., 1985)	All programs - Plan input and review process. Ongoing	
• review proposals to construct dams on coldwater streams to prevent their construction where inappropriate or to ensure that bottom draw designs are used	Lakes and Rivers Improvement Act administration	Increase compliance monitoring

(iii) REHABILITATE DEGRADED OR ALTERED FISH COMMUNITIES	EXISTING FUNDING	ADDITIONAL FUNDING
. stock appropriate species to rehabilitate communities in Lake Simcoe, Georgian Bay including Nottawasaga Bay and Severn Sound, Gloucester Pool North River, Hog Creek and Mad River	Lake whitefish and lake trout in Lake Simcoe. Lake trout backcross in Nottawasaga Bay, Georgian Bay Brown trout in North, Coldwater, Mad and Wye Rivers, Hog, Marl and Hawkestone Creeks.	
. support the Federal Sea Lamprey Control Program to control populations of lamprey in Georgian Bay, the Sturgeon River and other streams as necessary	Ensure removal of dams does not allow lamprey access - cooperate as requested	
. encourage release of breeding stock especially large walleye in Georgian Bay and Gloucester Pool and muskellunge throughout the district	Promote with anglers	Prepare new educational material and distribute
. continue to assist groups participating in Community Fisheries Involvement Program projects to stock walleye fingerlings and, possibly, fry where required to assist walleye populations, especially in Severn Sound and Gloucester Pool	Ongoing	
(iv) REHABILITATE DEGRADED HABITAT		
. develop detailed habitat management/ rehabilitation plans for watersheds and lakes	Develop habitat management plans for Mad, Batteaux and North Rivers and Hog and Willow Creeks	Establish priorities and implement plans
. liaise with OMOE regarding the development and implementation of Remedial Action Plans for Collingwood Harbour and Severn Sound	Continue to participate on Remedial Action Plan Committees	

	EXISTING FUNDING	ADDITIONAL FUNDING
. expand the Community Fisheries Involvement Program and other corporate or private rehabilitation efforts especially with regards to coldwater streams	Promotion of the Program	Some new proposals may require increased funding
. work with landowners, municipalities, conservation authorities and private groups to improve and maintain fisheries habitat by providing manpower, funding and technical expertise for projects especially on coldwater streams and inland lakes with heavily developed shorelines	C.F.I.P.	Inland Lakes - Orr Lake, Bass Lake, North River, Hog, Matheson and Willow Creeks
. remove dams from coldwater streams or promote the conversion of top draw dams to bottom draw where appropriate	As opportunities arise with private dams	Mad River - Glen Huron dam - conversion to bottom draw. North River, Nottawasaga River (Nicolson's) - remove dam
(v) IDENTIFY UNDERUTILIZED SPECIES, STOCKS AND HABITAT		
. conduct lake and stream inventory studies and creel surveys to identify underutilized stocks, species and habitat and to determine angler preferences	Creels - Severn Sound (2 yrs. out of 5) Six Mile, Sparrow and Little Lakes, Gloucester Pool, Lake Couchiching, Black Lake, Nottawasaga Bay	Mad, Batteaux, Noisy, Pine and Nottawasaga (above Hwy 50) Rivers, North River, Hog and Willow Creeks
(vi) EXPAND ASSESSMENT OF FISH POPULATIONS IN REHABILITATION AREAS		
. assess walleye populations especially in Severn Sound, Gloucester Pool and the North River	Severn Sound assessments - ongoing as part of Remedial Action Plan	Index netting Gloucester Pool and North River
. assess lake trout backcross populations in Nottawasaga Bay	In cooperation with Lake Huron Fisheries Unit	Creel survey

	EXISTING FUNDING	ADDITIONAL FUNDING
• assess lake trout, lake whitefish populations in Lake Simcoe	In cooperation with Lake Simcoe Fisheries Assessment Unit	
• assess salmonid populations in coldwater streams and rivers especially using biomass surveys	(See Strategy X under General Strategies)	
• assess populations where Community Fisheries Involvement Program projects have been implemented	Severn Sound, Gloucester Pool, Hawkestone Creek, Hog River, North River, Matheson Creek	
(vii) UPDATE AND REFINE USER SURVEYS		
• perform creel surveys at a district level	Six Mile, Sparrow and Little Lakes, Gloucester Pool, Lake Couchiching, Black Lake	Develop priorities
• coordinate creel surveys on Severn Sound as described in the assessment plan for Lake Huron (OMNR, 1986b)	Two years out of five (most recent 1987, 1988)	
• assist the Lake Simcoe Fisheries Assessment Unit with creel surveys on Lake Simcoe	As required	
• encourage implementation of a Provincial angler survey	Participate in internal deliberations	
(viii) UTILIZE SPORT SPECIES TO MAXIMUM BENEFIT		
• extend the season for rainbow trout in coldwater streams/rivers including the lower portion of each of the Nottawasaga, Sturgeon and Coldwater Rivers	Administrative - prepare changes to regulations for approval at Region/Main Office	

	EXISTING FUNDING	ADDITIONAL FUNDING
. investigate the feasibility of opening the rainbow trout season at 6:00 a.m. each year to reduce enforcement problems and increase the number of legitimate fishing opportunities	Internal review re. administrative/enforcement concerns. Prepare new regulation for approval	
. investigate the feasibility of opening the rainbow trout season on a constant date, e.g. April 20, to reduce enforcement problems and increase the number of legitimate fishing opportunities	As above	
. investigate the feasibility of extending the season closing date for bass in waters of Georgian Bay from November 30 to March 31	As above	
. investigate the feasibility of altering the sanctuary at Tug Channel (Port Severn) to allow spring fishing for salmonids and remove the sanctuary in Crooked Bay of Six Mile Lake		Internal Review followed by public involvement and decision
(ix) MAXIMIZE UTILIZATION OF ALL FISH HABITAT		
. maintain fishways and remove barriers for migratory trout and salmon in coldwater streams where appropriate and where they do not threaten resident populations of trout (e.g. brook trout) or increase access for sea lamprey	Maintain Earl Rowe Provincial Park and Nicolson Dam Fishways. Maintain lamprey barriers - Sturgeon River	
. create barriers to prevent migratory salmonids from ascending unsuitable ditches and small intermittent streams for spawning; e.g. Black Ash Creek		Assist cost of installation - establish priorities
. stock desirable species in underutilized habitat	Largemouth bass in Orangeville Reservoir, Big Gully, Douglas, Narrow and Stuart Lakes. Brown trout in Mad and Wye Rivers and Lafontaine and Marl Creeks	Splake in Woodland and McCrae Lakes, chinook salmon in Georgian Bay (C.F.I.P.)

	EXISTING FUNDING	ADDITIONAL FUNDING
(x) ENCOURAGE ACCESS		
• encourage fisheries resource oriented organizations to develop access facilities for streams e.g. Trout Unlimited		Nottawasaga River, North River
• work with municipalities to develop access	Oro Township - Lake Simcoe	Direct efforts at coldwater streams
• investigate the feasibility of providing incentives to landowners to provide access to anglers	Initiate internal discussion/ review	May be required
• acquire private lands and develop access facilities		e.g. Nottawasaga River, Nottawasaga Bay, develop priorities
(xi) CREATE NEW HABITAT		
• investigate the feasibility of creating artificial reefs (log cribs) and spawning habitat (half logs) for largemouth and smallmouth bass in developed inland lakes such as Orr Lake	Initiate experimental project in Orr Lake Encourage C.F.I.P. groups	
(xii) PREVENT THE EXTINCTION OF RESIDENT SPECIES OR STOCKS IDENTIFIED AS THREATENED		
• maintain gene pools of Lake Simcoe whitefish and lake trout in refuge lakes e.g. Upper Roslyn Lake, Nipigon District for lake trout and lake whitefish	Ongoing	
(xiii) PREVENT THE INTRODUCTION OF UNDESIRABLE SPECIES		
• maintain/create barriers to partition coldwater streams to keep rainbow trout and salmon from using brook trout habitat where appropriate		Sturgeon, Pine and North Rivers, Willow, Hawkestone, Bluffs and Sheldon Creeks

	EXISTING FUNDING	ADDITIONAL FUNDING
(xiv) PROMOTE UNDERSTANDING AMONGST USER GROUPS		
. assist in the negotiation of Indian fishing agreements	Support ongoing efforts	
(xv) ENCOURAGE USE OF UNDERUTILIZED SPECIES/STOCKS		
. encourage fishing derbies which target underutilized species, e.g. black crappies in Georgian Bay	Promote through local hunting and angling/conservation clubs/ interested groups	
. encourage private stocking of warmwater fishing ponds with natural populations of bullhead, pumpkinseed and rock bass where appropriate	Provide information as required	Issue a fact sheet on management of warmwater ponds for fish production and promoting the economic advantages
. expand the bowhunting season for carp to include the near-shore waters of the Huronia portion of Georgian Bay and all of Matchedash Bay	Prepare new regulation for approval at Region and Main Office levels	
Commercial Fishery Strategies and Tactics		
(i) REHABILITATE DEGRADED OR ALTERED FISH COMMUNITIES		
. stock lake trout backcross to rehabilitate the deep water trout community in Georgian Bay	Support current annual stocking levels	
. monitor chub populations and control harvest to rebuild the population	Annual quota adjustments	
(ii) PREVENT OVEREXPLOITATION		
. encourage the use of live capture gear		
. enforce existing legislation especially those regulating catch quotas, seasons and reporting requirements	Ongoing through enforcement program	Increase enforcement

	EXISTING FUNDING	ADDITIONAL FUNDING
. continue quota management for the commercial food fishery on Georgian Bay	Annual adjustments as necessary	
. restrict the harvest of lake trout backcross to keep total annual mortality to a maximum of 50 percent	Quota enforcement	
. manage the harvesting of baitfish to assure:		
(a) adequate forage for top predator species and (b) adequate supplies for the baitfish industry especially in the Lake Simcoe fishery	In cooperation with Maple District	Increase assessment of baitfish populations
. prevent local extinctions of baitfish species by controlling harvest and preventing habitat loss; exclude baitfish harvest from areas inhabited by rare species		Increase enforcement effort re. bait fishermen Increase population assessment efforts to identify populations under stress
(iii) MONITOR AND ALLOCATE RESOURCES		
. assess the needs of all users and allocate resources, based on potential yields, to meet demands		Provide more opportunities for dialogue with user groups
(iv) PREVENT INTRODUCTION OF UNDESIRABLE SPECIES		
. enforce existing legislation and regulations including those pertaining to the aquaculture industry to prevent culture and release of undesirable species or strains and encourage the use of wild strains	Enforcement program Inform aquaculturists of regulations pertaining to their operations	
(v) PROMOTE UNDERSTANDING AMONGST USER GROUPS		
. assist in the negotiation of Indian fishing agreements	Support ongoing efforts	

	EXISTING FUNDING	ADDITIONAL FUNDING
(vi) ENCOURAGE THE USE OF UNDERUTILIZED FISH SPECIES/STOCKS		
. encourage the development of markets for underutilized commercial species	Support industry or other initiatives in finding new markets for underutilized species	Prepare and distribute brochure(s) with recipes for preparation of underutilized species
(vii) ENCOURAGE THE COMMERCIAL AQUACULTURE INDUSTRY TO UTILIZE APPROPRIATE GROUND AND SURFACE WATERS FOR THE CULTURING OF SALMONIDS, OTHER SPORT SPECIES AND BAITFISH WHEN APPROVED UNDER PROVINCIAL REGULATION	District wide	
Rare and Endangered Fish Species Management Strategies and Tactics		
(i) REHABILITATE DEGRADED OR ALTERED FISH COMMUNITIES		
. stock lake trout and lake whitefish in Lake Simcoe	Maintain present annual stocking levels (in cooperation with Lake Simcoe Fisheries Assessment Unit)	
(ii) EXPAND ASSESSMENT OF FISH POPULATIONS IN LAKE SIMCOE		
. work with Lake Simcoe Fisheries Assessment Unit on projects designed to assess lake trout and lake whitefish populations in Lake Simcoe	Creel surveys Index netting (in cooperation with Lake Simcoe Fisheries Assessment Unit)	
(iii) MONITOR ALL DISTRICT FISHERIES ON A REGULAR BASIS TO IDENTIFY THREATENED SPECIES OR STOCKS		
. encourage Lake Huron Fisheries Unit to assess the status of the short nose cisco in Georgian Bay	Continue discussions	

(iv) PREVENT THE EXTINCTION OF RESIDENT SPECIES OR STOCKS	EXISTING FUNDING	ADDITIONAL FUNDING
• maintain a sanctuary for short nose cisco in Georgian Bay; establish other sanctuaries as necessary	Enforcement program	
• ensure that commercial fishermen comply with any sanctuaries, new or existing on Georgian Bay	Advise commercial fishermen	
• maintain gene pools of Lake Simcoe whitefish and lake trout in refuge lakes	Upper Roslyn Lake selected as refuge for Lake Simcoe whitefish and lake trout	
• support the efforts of other organizations such as Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Royal Ontario Museum that are investigating the status of rare and endangered fish species	Support efforts	
• inform the public on the status and importance of rare and endangered species in local waters		Issue news releases as necessary

6.0 Public Consultation

This section describes and explains alterations made to management strategies and tactics and the implementation schedule as they appeared in the Draft Fisheries Management Plan, November 1987. These changes were made as a result of public input.

Throughout the planning program, the views of interested members of the public were sought and when received, were carefully considered (see Appendix 3). Public consultation was concentrated in two phases. Input received during the second phase was considered during the preparation of this document.

Based upon a limited volume of public input received it has been concluded that there is overall public support for the direction of fisheries management as proposed in the draft plan. However, five statements on the phase two questionnaire were not supported by respondents. Each statement was directly related to a different management tactic within the Sport Fishery Strategies and Tactics section (3.7.2) of the draft plan. While response to the five questionnaire statements was not supportive, neither could it be realistically considered as negative. Rather, it was neutral in nature and analysis indicated significantly larger numbers of "no opinion" responses to these statements rather than "disagree" or "strongly disagree" responses.

Four of the tactics were designed to implement the same sport fishery management strategy, "Utilize sport species to maximum benefit," (#vii, p.25). Each of the four would, if implemented increase the number of available fishing opportunities through lengthening seasons (rainbow trout and largemouth bass) and altering the status of sanctuaries (Tug Channel and Six Mile Lake). The fifth tactic appeared under the strategy, "(xv) Encourage use of underutilized species/stocks," and called for a district wide regulation permitting a bow hunting season for carp. Of the five, this tactic was the most poorly supported.

Each tactic represented a change from the status quo. Perhaps most importantly, none were accompanied by rationale statements. In this document rationale statements have been added to the Issues and Problems section (2.6) and additional statements appear in this section.

Extension of the rainbow trout season in the lower reaches of three rivers has been retained as a tactic (3.7.2 #viii) and remains in the implementation schedule. The Georgian Bay population can easily withstand this measure and spawning/nursery habitat is not involved. It will help to provide additional, accessible angling opportunities. There will be no direct impact upon other OMNR administrative districts in terms of regulation changes or enforcement.

The tactic to extend the angling season for largemouth bass in Georgian Bay, has been altered to "investigate the feasibility of extending the season" (3.7.2 #viii). Implementation must be preceded by further internal and possibly, public consultation especially in other districts bordering the Bay. This process may be implemented over the next five year period at minimal cost. Further study of the biological implications may also be required.

Investigation of the feasibility of altering the Tug Channel sanctuary remains as a tactic and a part of the Implementation Schedule. The purpose of the sanctuary is to protect spawning walleye from angling activity. However, it prevents angling for other species, such as rainbow trout, which school in the vicinity. Making angling opportunities available while continuing to protect walleye will be the intent of any alteration of the sanctuary regulation. The ministry wishes to remain committed to identifying a suitable change, however, a satisfactory solution may not be found.

Removal of the sanctuary from Crooked Bay of Six Mile Lake will remain as a management tactic and it will remain in the current Implementation Schedule. The ministry is committed to maintaining those sanctuaries which fulfill a clear, identifiable biological purpose such as protecting spawning populations. This sanctuary fulfills no such purpose. It is difficult for the ministry to justify an enforcement effort for such a sanctuary when other, more critical areas require attention.

The tactic dealing with a bow hunting season for carp/suckers has been modified. It now calls for preparation of a regulation permitting the activity on the near-shore waters of the Huronia District portion of Georgian Bay including all of Matchedash Bay. This will be in addition to the existing season on Orr Lake. No other water bodies will be added during the next five years. The ministry is committed to encouraging greater use of the traditionally less popular fish species. Permitting bow hunting for carp and sucker in the shallow, near-shore waters of the Bay has the potential to provide a significant number of accessible, unique recreational opportunities. It may also serve to divert attention away from the traditional, more heavily utilized species.

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GLOSSARY

ANGLER-DAY

.A measure of fishing effort or activity which is equivalent to four angler-hours. This is based on the assumption that the average fishing trip is approximately four hours. One angler-day is considered to be one angler opportunity.

ANGLER-HOUR

.A measure of fishing effort or activity and represents one hour of active fishing by one angler.

BAITFISH

.Any member of the minnow family Cyprinidae, except carp and goldfish; the mudminnow family Umbridae; the stickleback family Gasterosteidae; the trout-perch family Percopsidae; the sculpin family Cottidae; the genus Leucichthy of the whitefish family Coregonidae and the darter sub family Etheostomatinae.

COARSE FISH

.Commonly includes fish from the families Catostomidae (suckers), Ictaluridae (catfish), Gadidae (cods), Sciaenidae (drums) and Cyprinidae (carp).

COMMERCIAL FISH

.Fish other than game fish (See The Ontario Fishery Regulations July 1, 1982). In this plan, commercial fish refers to fish species captured under the authority of a commercial licence and marketed.

CURRENT USE

.A measure of use of the fish resources by key users (e.g., anglers, commercial fishermen, bait harvesters, etc.) and presented as angler-days of fishing effort and kilograms of fish harvested for the sport fishery, kilograms of fish harvested for the commercial fishery, and dozens of baitfish harvested by the bait fishery.

EXOTIC FISH SPECIES

.A fish species which is neither native nor has become naturalized or self-sustaining in waters within the Province of Ontario.

FISH COMMUNITY

.A combination of different fish species living and interacting together in the same body of water.

INDIGENOUS FISH SPECIES

.The native fish species which originally inhabited a waterbody. For example, lake trout was one of the indigenous fish species of Lake Huron and Georgian Bay.

LAKE TROUT BACKCROSS

.A hybrid fish produced from crossing a splake with a lake trout (3/4 lake trout x 1/4 brook trout).

NATURALIZED FISH SPECIES

.A fish species which was not indigenous to a particular waterbody but was introduced and has become established through natural reproduction. Some examples in Lake Huron and Georgian Bay would include rainbow trout and brown trout.

OBJECTIVE

.A quantifiable and attainable end which is to be achieved.

PACIFIC SALMON

.Pacific salmon includes coho salmon, chinook salmon, kokanee salmon, pink salmon and any member of the genus Onchorhynchus.

PANFISH

.This group generally includes members of the families Centrarchidae (such as rock bass, sunfish and crappie) and Percidae (yellow perch).

POTENTIAL YIELD

.An estimated weight of fish that can be removed from a water body on a sustained basis while maintaining fish populations.

PROJECTED USE

.The level of fishing effort (angler-days) and/or fish harvested (kg or dozen) that is expected to occur by the year 2000.

REHABILITATION

.This term may be applied to both fish populations and fisheries habitat. In both instances rehabilitation denotes efforts to enhance or restore a degraded or stressed situation to its original condition.

SOUTHERN ONTARIO

.The southern Ontario planning region includes the following districts: Algonquin Park, Aylmer, Brockville, Cambridge, Carleton Place, Chatham, Cornwall, Huronia, Lindsay, Maple, Napanee, Niagara, Owen Sound, Parry Sound, Pembroke, Simcoe, Tweed and Wingham.

SPLAKE

.A hydrid fish produced from crossing a lake trout with a brook trout (1/2 lake trout X 1/2 brook trout).

SPORT FISH

.Any fish that are legally caught by angling.

STOCK

.A species group or population of fish which maintains and sustains itself over time and may be identified by distinct genotypic or phenotypic characteristics.

STRATEGY

.Planned actions or measures designed to achieve a desired end.

TACTIC

.A specific method designed to achieve one or more strategies.

TARGET

.A quantified end to be achieved or completed by a specific date.

APPENDICES

APPENDIX 1: Streams either producing or capable of producing coldwater fish species, especially trout.

Bailey Creek
Batteaux River
Baxter Creek
Bear Creek
Beeton Creek
Black Ash Creek
Black Band Creek
Bluffs Creek
Boyne River
Brock's Beach Creek
Coates Creek
Coldwater River
Coleman Creek (Hewitt's)
Credit River
Egbert Creek
Glen Huron Creek (Leys Burns)
Hawkestone Creek
Hog Creek
Innisfil Creek
Joe Mennel's Creek
Keenansville Creek
Unnamed Creek #5 (Innisfil Twp.)
Unnamed Creek #6 (Innisfil Twp.)
Unnamed Creek #11 (Innisfil Twp.)
Kid's Creek
Kruger Creek
Lafontaine Creek
Lisle Creek
Lover's Creek
Mad River
Marl Creek
Matheson Creek (Aunt Maggie's)
McMahon Creek
Monora Creek
Noisy River
North River
Nottawasaga River (upper reaches)
Ossossane Creek
Patton's Creek (Bear)
Picottes Creek
Pine River
Pretty River
Sheldon Creek
Silver Creek, Nottawasaga Twp.
Silver Creek (Orillia Twp.)
Sturgeon River
Sucker Creek
Thunder Bay Creek
Tioga Creek
Whiskey Creek
Willow Creek

APPENDIX 2: All lakes in Huronia District, 10 hectares in area or larger

Barron	Baxter	Boleau
Bass	Bearshead	Buck
Buckshot	Burrows	Cranberry
Douglas	Dumbell	Eastern
Farlain	Gibson	Gignac
Grass	Hart (Gibson)	Horseshoe
Jerry's	Lalligan	Lamour
Little Boleau	Little (Vespra Twp.)	Little, Gravenhurst Twp.
Lone	Long (Matchedash)	Marl
McDonald	Midland Park	Morrison
Mosquito	Mud	Narrow
Orangeville Reservoir	Orr	Otter
Penetang	Rat (Cana)	St. George
St. John	Second	Spence
Stuart	Turtle	Woodland

APPENDIX 3: Summary of Public Consultation Component of Huronia District Fisheries Management Planning Program *

Opportunity for public input to the planning process was provided at two times (phases); following release of the Background Information Summary Report in July 1987 and in November 1987, in conjunction with release of the Draft Management Plan.

The first phase involved the following elements:

1. Newsrelease #1
2. Print media advertising
3. Poster
4. Public information forums (3)
5. Newsrelease #2

In addition, a questionnaire was included in the Background Information Summary Report which was mailed prior to the public forums.

The second phase involved three elements as follows:

1. Newsrelease
2. Public information forums (2)
3. Questionnaire

In phase two, the newsrelease was distributed twice. The initial mailing, to the entire mailing list, occurred one month prior to the public forums while the second distribution, to broadcast media only, occurred during the week immediately preceding the forums.

The draft plan was available at the public forums but was not mailed to the mailing list until after the forums were completed.

Despite variations in the format of the two phases the majority of public input occurred through the public information forums and the questionnaires.

In phase one a greater emphasis was placed upon advertising the planning program, in particular the public information forums. It was hoped that the print and broadcast media would use the newsrelease and that outlets with outdoor writers/features would provide extra exposure. Paid advertising was used in four newspapers in which regular features on "outdoor" topics were not available.

* For more information on the public consultation component see the following unpublished OMNR reports
Public Consultation Summary and Analysis of Public Input - Phase One, September 1987.
Public Consultation Summary and Analysis of Public Input - Phase Two, February 1988.

The poster was designed primarily as a means of reaching the cottaging public and use of two types of advertising was considered to be more effective.

In designing phase two, it was reasoned that the mailing list which had evolved through phase one represented the 'publics' with an interest in the planning program and that reaching them should be the primary focus. It was decided that advertising, paid or otherwise would not be cost effective. The newsrelease was relied upon as the advertising vehicle. Less use was made of the release by the media than had been the case in phase one.

With one exception, the public information forums were scheduled at the same locations in both phases. During phase one total attendance at three forums was 48. In phase two, two forums were attended by 19 people. *

At the forums, during both phases, presentations were made by ministry staff and were followed by question and answer sessions. All questions asked, comments made and responses given were recorded. In phase one 42 questions/comments were raised while in phase two 19 were received. While a wide range of topics were raised a relatively small number were touched on repeatedly. They were as follows:

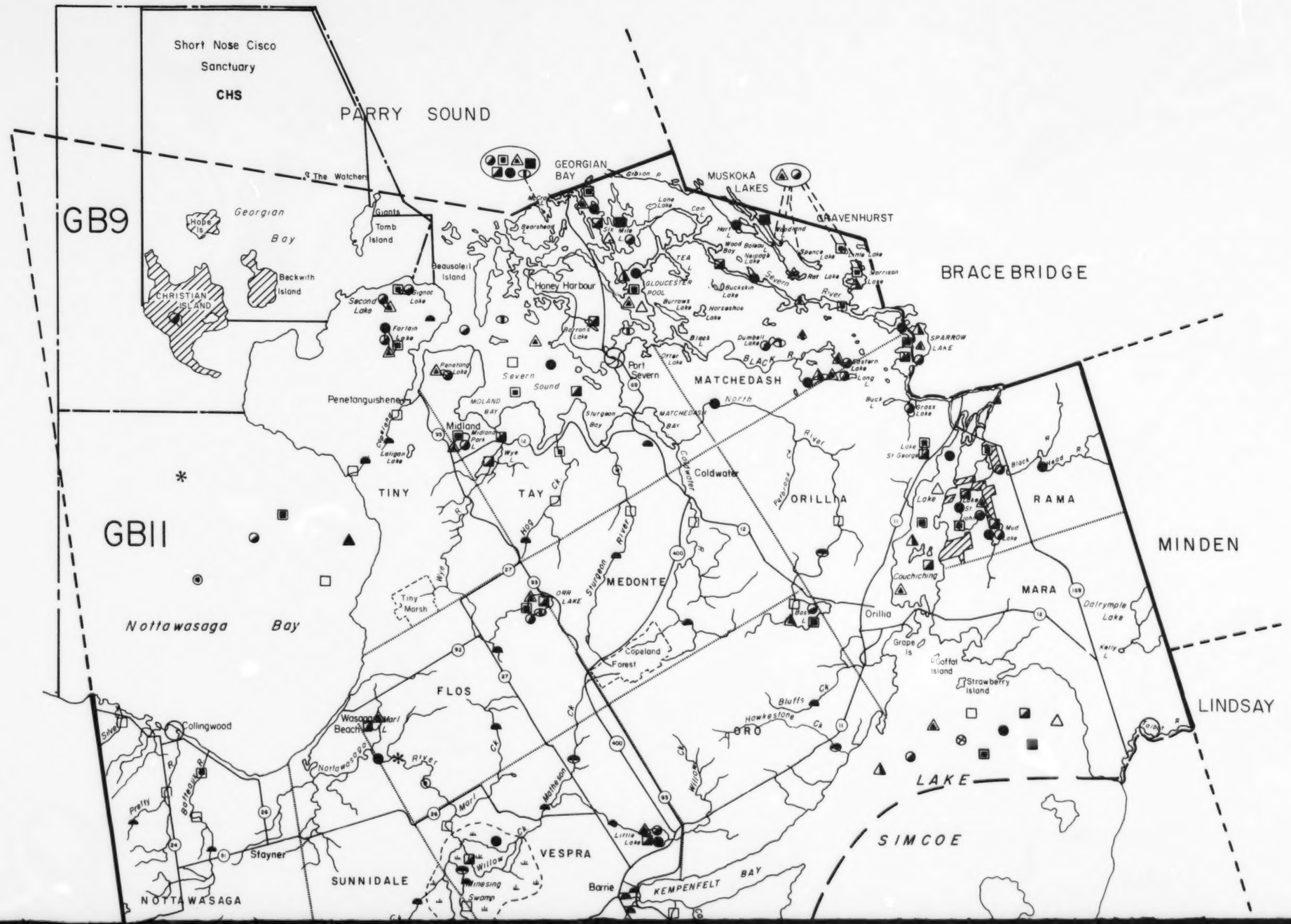
1. Commercial fishing vs sport fishing conflict; incidental catches, waste, role of commercial fishermen
2. Loss of habitat
3. Effectiveness of the ministry's plan review process in protecting habitat
4. Use of fishing licence revenues
5. Declining walleye populations in Severn Sound of Georgian Bay
6. Georgian Bay splake and lake trout backcross programs
7. Community Fisheries Improvement Program - success of walleye culture ponds - expansion of the program
8. Willow Creek fish kill - July 1987

Very few questions/comments directly addressed the central components of either the Background Information Summary Report or the Draft Management Plan i.e. issues and problems, management strategies and tactics in the Background Information Summary Report or objectives, targets, management strategies and tactics and implementation schedule in the Draft Management Plan.

* Three forums were scheduled in phase two; one was cancelled due to inclement weather.

Questionnaires in both phases were completed by 10 people in phase one and by 15 people in phase two. Given the number of questionnaires circulated (more than 150 in each phase), the percentage of response was extremely low. Despite this, response was tabulated and analyzed and was used in development of the Draft Management Plan and the final Management Plan. In phase one questionnaire response permitted a ranking of issues and problems presented in the Background Information Summary Report. This ranking together with other comments on the questionnaires were used in re-organizing and changing (adding to) the proposed strategies and tactics which appeared in the Background Information Summary Report. In phase two the questionnaire was designed to determine the level of support for 24 of the strategies and tactics in the Draft Management Plan. Those which were not supported were reconsidered (see section 5 of this document).

MAP I


Short Nose Cisco
Sanctuary
CHS
PARRY SOUND
GB9
GB11
The Watchers
Giants
Tomb
Island
Hope
Is.
Georgian
Bay
Beckwith
Island
CHRISTIAN
ISLAND
Beausoleil
Island
GEORGIAN
BAY
Gibson R.
MUSKOKA
LAKES
GRAVENHURST
BRACEBRIDGE
Honey Harbour
Second
Lake
Fairlain
Lake
Penetanguishene
Midland
Severn
Sound
Port
Severn
MATCHEDASH
North
MATCHEDASH
BAY
Sturgeon
Bay
Coldwater
TINY
TAY
TAY
CK.
Hog
R.
Wye
R.
Tiny
Marsh
Nottawasaga
Bay
ORR
LAKE
MEDONTE
Sturgeon
River
Copeland
Forest
ORILLIA
Orillia
RAMA
MARA
MINDEN
LINDSAY
Couchiching
Grape
Is
Moffat
Island
Strawberry
Island
Dalrymple
Lake
FLOS
ORO
Bluffs
Ck
Hawkestone
Ck
Willow
Ck
Mathison
Ck
Mari
Ck
Wasaga
Beach
Nottawasaga
River
Collingwood
Stayner
Pretty
R.
Batteaux
R.
SUNNIDALE
VESPRA
Willow
Minnesing
Swamp
Little
Lake
Barrie
KEMPENFELT
BAY
LAKE
SIMCOE
NOTTAWASAGA

HURONIA DISTRICT
FISHERIES BACKGROUND INFORMATION

0 5 10 15 kilometres

0 4 8 miles

GB Commercial fishing quota areas

- Walleye
- Lake Trout
- Whitefish
- Herring
- Rainbow Trout
- Splake
- Chinook
- Brook Trout
- Coho
- Smallmouth Bass
- Largemouth Bass
- Yellow Perch
- Northern Pike
- Muskellunge
- Black Crappie
- Brown Trout

Note : Symbols identify fish found in that particular body of water, not in that exact location.

- Dam with Fishway
- Fish Viewing Area
- Indian Reserve
- CHS Chub Sanctuary

OWEN SOUND

CAMBRIDGE

MAPLE

MAPLE

LAKE SIMCOE

KEMPENFELT BAY

Collingwood

Beaver R.

Nottawasaga River

Pretty R.

Boyne R.

Stayner

SUNNIDALE

VESPRA

Barrie

Willow Creek

Minesing Swamp

Little Lake

Coates Ck

Bear Ck

Lovers Ck

Coldwater Ck

Cook's Bay

NOTTAWASAGA

Noisy R.

Mad River

Black Ash Ck

Lisle

Tiffin Ck

Pottery Ck

INNISFIL

ESSA

Boxter Ck

TOSORONTIO

PINE RIVER

Sougeen R.

MULMUR

Cookstown

WEST GWILLIMBURY

Alliston

Innisfil Creek

Pennville Ck

Bradford

Grand R.

MELANCTHON

Shelburne

Sheldon Creek

ADJALA

TECUMSETH

Frost Ck

HOLLAND R.

MONO

Nottawasaga R.

Bailey Ck

Beeton Ck

Humber R.

Orangeville Reservoir

AMARANTH

Orangeville

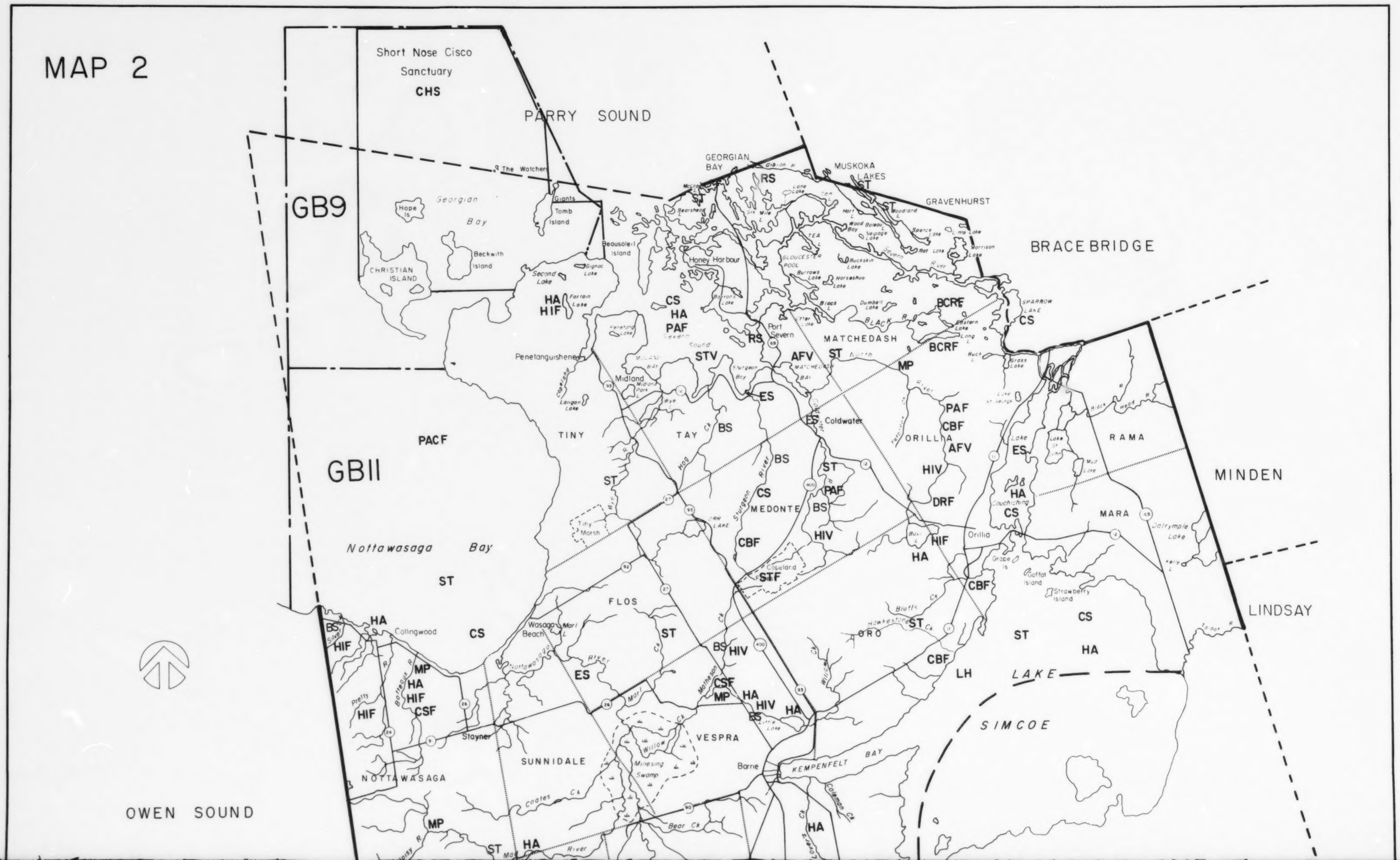
Credit R.

Willow Ck

EAST GARAFRAXA

Grand R.

MAP 2


Short Nose Cisco Sanctuary
CHS
PARRY SOUND
GB9
GB11
GEORGIAN BAY
MUSKOKA LAKES
GRAVENHURST
BRACEBRIDGE
MINDEN
LINDSAY
RAMA
MARA
ORILLIA
MATCHEDASH
TINY
TAY
FLOS
SUNNIDALE
VESPRA
NOTTAWASAGA
OWEN SOUND
SIMCOE
LAKE
LH
ORO
MEDONTE
Georgian Bay
Nottawasaga Bay
KEMPENFELT BAY
Honey Harbour
Port Severn
Penetanguishene
Midland
Collingwood
Wasaga Beach
Stayner
Barrie
Coldwater
Orillia
Beausoleil Island
Christian Island
Hope Is.
Giants Tomb Island
Beckwith Island
Second Lake
Gignac Lake
Fairlain Lake
Penetang Lake
Lafarge Lake
Tiny Marsh
Copeland
Strawberry Island
Grape Is.
Moffat Island
Sturgeon River
Hog Ck
Bluffs Ck
Willow Ck
Minesing Swamp
Coates Ck
Bear Ck
Mad River
Pretty R.
Boyne R.
Nottawasaga R.
Talbot R.
Dalrymple Lake
Couchiching
Gloucester Pool
Black R.
Severn River
Sparrow Lake
Lake St. George
Mud Lake
Rat Lake
Harrison Lake
Buckskin Lake
Horseshoe Lake
Burrows Lake
Eastern Lake
Grass Lake
Dumbell Lake
Woodland
Spence Lake
Lone Lake
Six Mile L.
Wood Bay
Bolsover
Vereage Lake
Hart L.
Gibson R.
Georgian Bay
Sturgeon Bay
Midland Bay
Matchedash Bay
Lake Simcoe
PACF
CS
HA
HIF
HIV
PAF
RS
ST
STV
AFV
MP
ES
BS
CBF
DRF
BCRF
CSF
STF
LF

HURONIA DISTRICT
IMPLEMENTATION SCHEDULE
FISHERIES MANAGEMENT PLAN
1989 - 1993

0 5 10 15 kilometres

0 4 8 miles

HA Habitat Assessment
ST Stocking
FW Fishway Operations
ES Extended Seasons
LH Lake Herring Regulations
BCR Boat Cacheing Restriction
HI Habitat Improvement
CB Create Barriers
CHS Chub Sanctuary

PA Population Assessment
MP Management Plan
CS Creel Survey
RS Remove / Alter Sanctuaries
PAC Population Assessment Commercial Fish
BS Stream Biomass Survey
DR Dam Removal
AF Access Facilities

'F' after symbol indicates additional funding required

'V' after symbol indicates activity could be undertaken with cooperation of local sportsmen clubs / or volunteers

OWEN SOUND
CAMBRIDGE
MAPLE
MAPLE
SIMCOE
NOTTAWASAGA
SUNNIDALE
VESPRA
INNISFIL
ESSA
TOSORONTIO
MULMUR
MELANCTHON
WEST GWILLIMBURY
ADJALA
TECUMSETH
AMARANTH
EAST GARAFRAXA
Stayner
Barrie
Alliston
Bradford
Shelburne
Orangeville
Cookstown
KEMPENFELT BAY
Cook's Bay
Pretty R
Boyne R
Marl Ck
Willow Ck
Minesing Swamp
Coates Ck
Noisy R
Mad River
Bear Ck
Lovers Ck
Coleman Ck
Bighead R
Lisle
Creek
Saugeen
Boyne River
Sheldon Ck
Pennville Ck
Fish Ck
HOLLAND RIVER
Nottawasaga River
Barley
Beeton
Humber R
Orangeville Reservoir
Willow Ck
Credit R
Grand R
Grand R
HIF CSF
HIF
MP HA
HIV HA
BS
HA
ST HA
CSF HIF
HA
CSF
BS
CBF
CSF HA
HI
BS
ST
FW DRF FW
STF
BS
HA
INNISFIL
HI BS
CBF
HI
AF V
MONO
BS
HA CSF
ST